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Socioeconomic Level and Race as Biographical Data Moderators.

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SOCIOECONOMIC LEVEL AND RACE AS BIOGRAPHICAL DATA MODERATORS

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ABSTRACT

A 55-item biographical inventory blank (BIB) was used to predict several selection criterion measures: test battery performance; interview rating; physical rating; on-job classroom performance; and, on-job performance. Applicant's race and socioeconomic level (defined by father's occupation) were used to moderate BIB prediction across criteria. BIB data failed to predict criteria except test performance. This result suggested biographical inventories are limited in their generality across criteria by the specific nature of the criterion.

Race and SEL did not significantly moderate BIB prediction. The results indicated achievement via education was predictive of test performance across these subgroups. These results were interpreted as supporting the hypothesis that predictive BIB patterns are similar across groups.

INTRODUCTION

Clark Hull (1929) regarded .50 as the upper limit of validity coefficients for existing predictors. About 25 years later, Ghiselli (1955) made a comprehensive review of validity studies and found that nearly all coefficients were in the .30-.40 range, with an upper limit of .50. During the years intervening between these two papers, there apparently had been little discernible improvement in predictive efficiency.

Because of dissatisfaction with these relatively low validity coefficients, several investigators have, more recently, rejected the classical prediction model as an over-simplification, and sought prediction models more realistically concerned with the complexities of human behavior.

The classical validation model simply relates predictors to criteria. In contrast, one recent model, suggested by Guetzkow and Forehand (1961), and modified by Dunnette (1963a), considers the ". . . complex interactions which may occur between predictors and various predictor combinations, different groups (or types) of individuals, different behaviors on the job, and the consequences of these behaviors relative to the goals of the organization." (Dunnette, 1963a, p. 318.) This model implies that prediction can be enhanced by determining how these intervening variables operate within a given setting. The present study was conceived within the framework of Dunnette's model as it is illustrated in Figure 1. The ensuing discussion follows this figure.

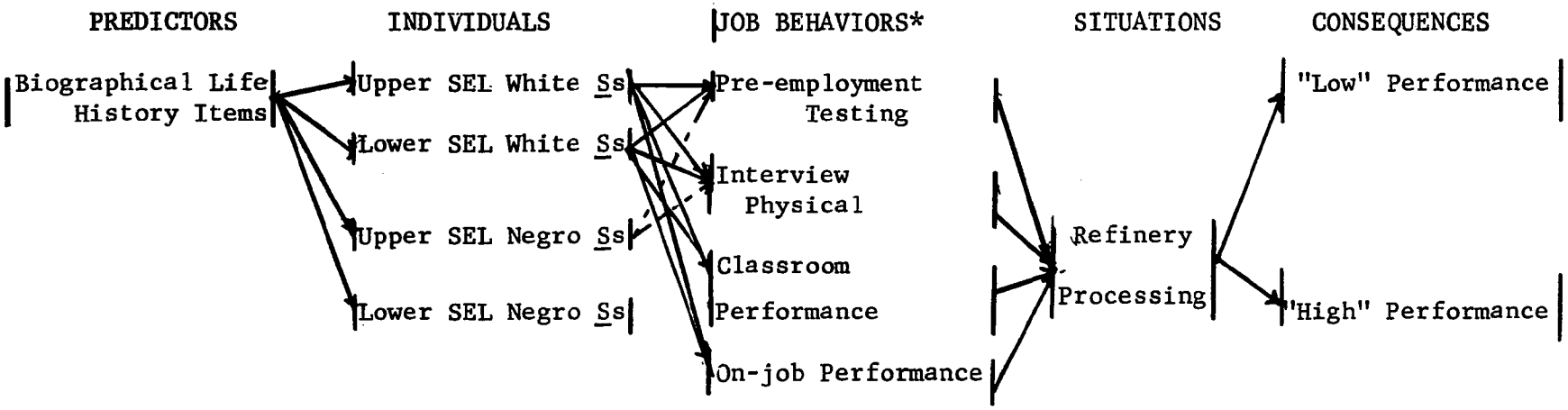

Figure 1. Dunnette's (1963a) prediction model as applied in the present study.

*These job behaviors are here treated as behavioral criteria rather than as predictors.

Biographical Data as Predictors

The use of biographical information blanks (BIB) to predict behavior is based on the rationale expressed by Nunnally that ". . . without any more direct way of forecasting how an individual will behave in the future, the best bet is that he will continue behaving in the same manner that he has in the past." (Nunnally, 1959, p. 369.)

In his 1962 Annual Review article, Dunnette considered the predictive use of biographical information to be well-known, widespread, and time-tested. Considering the diversity of criteria and populations which have been sampled, the consistent, if moderate, success of biographical inventories has been remarkable. Otis (1966), for example, considers the BIB to be one of the most versatile instruments in psychology; Henry (1966) believes that the BIB is the best single predictor of future behavior where the criterion is of a total or complex nature. McDermid (1966) found that of seven psychometric instruments, only the BIB significantly predicted engineering "creativity." Similarly, Hobart and Dunnette (1967) reported that a biographical questionnaire correlated more highly with a criterion of managerial success than any other instrument used in a comprehensive test battery.

Recently, increased emphasis has been given to the need for developing a theoretical underpinning for biographical inventories. Dunnette (1962), for example, has criticized psychologists working with BIB data as ". . . more intent on achieving statistical prediction than on gaining any understanding of the dynamics of success which may be suggested by the data." (p. 293.) Henry (1966) suggests that this emphasis on theory development for BIB inventories has resulted from

the "prediction plateau" previously cited, and believes that increased predictive efficiency will not occur with this instrument until more is known about the factors underlying predictive items.

Theory construction relating BIB predictors to criteria can be considered to lie along a continuum of generality depending on the criteria used, the population considered, and the biographical items sampled. Three cases are schematically shown in Figure 2. These cases are illustrated with variables from the present study.

Case 1. Minimum Generality. Generality of the data to other situations is minimal when a few biographical items are used to predict an isolated criterion (e.g., test performance) for a relatively homogeneous sample (e.g., all male applicants). Unfortunately, most of the studies to date have been of this nature. It is obvious that this approach has not been fruitful for theory development.

Case 2. Generality Across Criteria. This paradigm relates biographical items or dimensions to multiple performance measures within a restricted population subgroup. Those biographical items or dimensions found to be invariant within one subgroup across different criteria could suggest testable hypotheses about the unique relations between these items and the particular subgroup. The resulting information would be useful for elaborating the life history antecedents of subgroup membership.

Using this paradigm, Morrison, Owens, Glennon and Albright (1962) factor analyzed the life history antecedents of 418 petroleum research employees across ratings of performance, number of patent

Case 1. One Group with One Criterion

			Criterion Test Performance
Group	White Applicants	High Score	a,c,d,f,g,h
		Low Score	i,j,k,l,m,n

Case 2. One Group Across Several Criteria

			Criterion			
			Tests	Interview	Classroom	Job
Group	White Applicants (Upper SEL)	High Score	a,b,c,d,	a,b,d,e,	a,b,d,f	a,b,c,g
		Low Score	j,k,l,m	j,k,l,n	k,l,m,n	l,m,n,o

Case 3. Two or More Groups with One Criterion

			Criterion Test Performance
	Negro Applicants (Upper SEL)	High Score	a,b,c,d,e
		Low Score	k,l,m,n,o
	Negro Applicants (Lower SEL)	High Score	a,b,c,e,f
		Low Score	j,k,m,n
Group	White Applicants (Upper SEL)	High Score	a,b,c,f,g
		Low Score	j,k,m,n
	White Applicants (Lower SEL)	High Score	a,c,f,g,h
		Low Score	j,k,l,m,n

Figure 2. Three illustrated models for relating BIB responses to criteria.

disclosures, and ratings of creativity. This analysis generated 5 factors accounting for 23% of the total variance: Favorable Self-Perceptions; Inquisitive Professional Orientation; Utilitarian Drive; Tolerance for Ambiguity; and, General Adjustment. These factord derived across criteria add clarity to the personal characteristics required of petroleum research employees.

Case 3. Generality Across Populations. This case relates life history antecedents predicting the same criterion across different cultures or populations.

For example, Buel, Albright, and Glennon (1966) used the BIB scoring key that was originally developed in the previously cited Morrison, et al. (1962) study of creative petroleum research personnel. Buel, et al. obtained significant validities using this key to predict creative research employees in a pharmaceutical laboratory. Likewise, Cassens (1966) considered the generality of life history factors across three cultural groups of successful petrochemical executives: Americans working in the United States; Latin Americans working in their native country; and Americans working in Latin America. Of 10 identified factors, Cassens concluded that 9 factors were common to all groups, although the specific items for a given factor varied with each sample.

One major problem with studies of the type reported by Cassens is that the common factors obtained may be artifacts of item content, i.e., personal achievement items cluster into a factor, familiar items cluster together, etc. If, however, common life history dimensions are found to exist for relatively similar criteria, their discovery could

extend our understanding of the relationship between these past behaviors and performance under various organizational and environmental conditions. Cassens (1966) study, for example, could be interpreted as supporting the hypothesis that biographical dimensions predicting job success will be similar irrespective of the cultural history of the employees.

The paradigms for cases 2 and 3 seem to have the most potential for developing useful theoretical constructs about the nature of biographical prediction.

Studies falling within case 2 facilitate the discovery of those behavioral antecedents common to a subgroup and predicting across multiple criteria. The results of such studies could provide biographically-defined statements of success unique to the particular subgroup in question. Unlike case 1, these statements would be referenced by multiple performance measures rather than a single measure of success. To the extent that these behavior dimensions correlate with multiple measures of performance, they increase in their value as theoretical constructs.

Case 3 studies would provide the necessary data to explore the generality of relationships found between biographical antecedents common to various subgroups and measures of performance. When life history dimensions common across subgroups predict the same criterion, the generality--and our understanding--of the relationship between these dimensions and the criterion should increase.

Both of the approaches to prediction typified in cases 2 and 3 have implications for evaluating minority group performance. Ash (1966),

in particular, has noted that the Civil Rights Act of 1964 increases the responsibility of psychologists to see that their tests do not, even if unintentionally, discriminate against minority groups. Studies of biographical variables along the two lines suggested could significantly aid the industrial psychologist in his understanding of the dynamics of minority group performance.

The discovery of predictive biographical items or dimensions specific to the performance of an ethnic subgroup (case 2) could be used to explore the relationship between these antecedents for this particular subgroup and for other identifiable subgroups. For example, this type of research could lead to operational definitions of "socio-economic deprivation" based on the predictive self-descriptions unique to this group and not found predictive for a group identified as "culturally-enriched."

The identification of predictive biographical items or dimensions common to two or more groups (case 3) could, ultimately, contribute to the development of "culture-common" test items, i.e., test stimuli equally appropriate for at least two cultural groups (Krug, 1966).

Individuals

One approach to studying "types" of individuals is to discover and use moderator variables. Many different labels have been attached to these variables: for example, "population control variable" (Gaylord & Carroll, 1948); "modifier variable" (Grooms & Endler, 1960); "referent variable" (Toops, 1948, 1959); "predictability variable"

(Ghiselli, 1956, 1960a, 1960b); and "moderator variable" (Banas, 1964, Saunders, 1956). Guion (1967) suggested that these labels are simply new words for such older terms as "interaction" or "experimental control." He writes that, in practice, the term "moderator variable" refers to virtually any variable used to divide people into distinguishable groups for which independent validity measures can be obtained. Dunnette (1966) notes that independent predictor-criterion relationships obtained for such homogeneous population subgroups will likely show different patterns. This implies the possibility that predictive efficiency of tests may be enhanced by isolating these homogeneous subgroups and developing unique scoring keys for each.

Two basic approaches, empirical and rational, have been used to identify legitimate moderators.

Empirically developed moderators have been derived from: 1) differences between predictor and criterion scores (Ghiselli, 1956, 1960a, 1960b, 1963); 2) differences between actual and predicted criterion scores (England, 1960; Neidt & Malloy, 1954); 3) intra-individual variability among subscores on a test (Berdie, 1961); and, 4) frequency of response and response inconsistency (Filbeck & Callis, 1961; Meehl & Hathaway, 1946).

Banas (1964) investigated the relative generality of empirical and rational moderators for increasing test-performance correlations for three occupational levels. A rational moderator, disability, was found to enhance the validity of the General Aptitude Test Battery for predicting the performance of handicapped and nonhandicapped workers in clerical, skilled, and nonskilled occupations. Empirically developed

moderators failed on cross-validation to enhance predictability. Part of this failure probably resulted from the relatively smaller sample sizes (with larger sampling error) remaining after the empirical moderators were developed.

The above mentioned Banas study also clarifies a practical difference between research with empirical and rational moderators. Larger populations are often required for empirically-moderated research since subjects used to develop the moderator can not legitimately be used for validation.

Socioeconomic Level as a Moderator Variable. Ghiselli (1956) found an occupational level inventory to be an effective moderator for a tapping and dotting test used to predict the job performance of taxi drivers. Although the correlation was only .26 for the total group, when cross-validation was restricted to those individuals whose occupational level was considered appropriate to the job, a validity coefficient of .66 was obtained between the test and performance on the job.

Hewer (1965) used a scholastic aptitude test to predict college success. The same scholastic aptitude scores predictive of college failure when obtained by upper-middle class students were predictive of moderate success when obtained by lower class students.

Since occupational level is one primary index of socioeconomic status (Brown, 1965), these two studies demonstrated that validity coefficients may be depressed by ignoring the socioeconomic level of the subjects. The use of socioeconomic level as a moderator variable may both increase our understanding of the nature of biographical

prediction and improve the efficiency of such prediction.

Ethnic Group as a Moderator Variable. It is generally agreed that Negro and white Americans differ in test performance (Dreger & Miller, 1960, 1965). Illustrative paradigms for evaluating minority group performance as predicted by biographical data were discussed earlier in this paper (cases 2 and 3 in Figure 2). In one of the few available studies specifically concerned with predicting Negro job performance from biographical data, Lopez (1966) found that performance measures of successful Negro and white toll collectors were differentially predicted by the biographical items. Dichotomizing Negro vs white as a moderator increased biographical predictions of Negro toll accuracy from a combined-group correlation coefficient of -.07 to a moderated subgroup correlation of .31. Krug (1966) specifically cautions against applying a test to a group differing from the validation group on some important non-test variable unless the test is revalidated on the new group. The use of an ethnic group moderator should both enhance the validity of the biographical items and extend our understanding of life history antecedents related to ethnic group performance.

Situations

Anastasi (1967) has stated that "The individual does not behave in a vacuum. He responds in a particular environment context, which in part determines the nature of his responses." (Anastasi, 1967, p. 304.) She has stressed the importance of considering the environmental variables to which individuals are exposed between prediction assessment and

availability of the criterion.

Although situational variables might prove useful as moderators, little research has thus far been directed toward this issue. Vroom (1960) found aptitude test scores to be positively correlated with job performance in motivating situations and either not correlated or negatively correlated with job performance in non-motivating situations. A consideration of biographical items across similar industrial situations could lead to an increased understanding of the relationship between life history antecedents and performance under various environmental conditions.

Consequences

The prediction model adopted for the present study (Figure 1) considers the organizational consequences of performance to be a complex function of identifiable variables intervening between predictors and criteria.

Beginning with the use of moderator variables to identify types of individuals, most of the studies previously cited attempted to define and account for the unique conditions appropriate to different job situations, persons, and specific behavioral outcomes. Dunnette (1963a, 1963b), in particular, has been responsible for a change in validation strategies away from a single or composite criterion of job success based on the classic prediction model, to a consideration of the separate relationships between each of the predictors and each of the available performance criteria. This latter approach to test validation is less concerned with "practical" validity (as discussed by Campbell,

1960) and more concerned with learning the meaning of test scores in terms of multiple dimensions of employee behavior (Ebel, 1961). Clearly, Dunnette's model implicitly assumes that establishing relationships between a predictor, moderators, and the criteria will increase our understanding of the way in which particular predictors work.

PROBLEM

The main purpose of this dissertation was to explore the possibility that the efficiency of biographical items for predicting multiple criteria could be enhanced by using moderator variables. Two rational moderators, socioeconomic level and ethnic group, were selected on the basis of the previous research and current industrial interest. In addition, the study was designed to examine an assumption of the particular test research model chosen (Figure 2, cases 2 and 3): i.e., that relationships established between predictors, moderator variables, and criteria would clarify the operation of the predictors.

A 55-item biographical inventory blank (BIB) was administered to white and Negro job applicants. Items in this BIB were used to predict the performance of these applicants on several subsequent selection criteria.

The following hypotheses were tested. These hypotheses can be divided into two categories. The first category dealt with increasing the statistical prediction of the criteria from biographical data by using moderator variables. The second category dealt with the differential patterns of biographical prediction found for each moderated subgroup.

Category I

1. The predictive efficiency of the BIB would be increased by subgrouping a cross-cultural population using socioeconomic level as the moderator. The previously cited studies by Ghiselli (1956) and Hewer

(1965) support this hypothesis.

2. The predictive efficiency of a BIB would be increased when ethnic group is used as a moderator variable. Both Lopez's (1966) data and Dreger and Miller's (1960) review support this hypothesis.

3. The predictive efficiency of a BIB would be further increased when both socioeconomic level and ethnic group were used to subgroup a heterogeneous population. If hypotheses (1) and (2) are confirmed, predictive efficiency resulting from this dual moderator should be higher than when using either moderator alone. However, restriction of criteria ranges would probably attentuate the validity coefficients obtained.

Category II

1. The predictive BIB pattern for successful upper socioeconomic level white and Negro subgroups would differ from the pattern for the successful lower socioeconomic level white and Negro subgroups.

2. The predictive pattern of BIB items across multiple criteria for the lower socioeconomic applicants would provide a biographically-based index of "socioeconomic deprivation."

3. Restricting consideration to the BIB prediction pattern of the high socioeconomic subgroup would provide an index of "socioeconomic enrichment" based on the life history antecedents of its members across multiple criteria.

4. Although moderator group analysis would yield higher validity coefficients, similar predictive patterns of life history antecedents would be found for successful white and Negro applicants. These patterns

would provide BIB items useful in developing an inventory equally appropriate to both ethnic groups. Cassen's (1966) study lends support to this hypothesis.

5. Relating each ethnic subgroup's performance to its unique life history antecedents would extend our understanding of the life history behaviors which affect ethnic group performance.

6. Similar BIB prediction patterns found for each of the 4 subgroups (2 ethnic x 2 socioeconomic) would provide items useful in developing an inventory equally appropriate to both ethnic groups and socioeconomic levels.

7. To the extent that the BIB prediction patterns found for each of the 4 subgroups differ, these differences would provide an increased understanding of the relationship between biographical predictors and performance.

Importance of the Problem

To the degree that the results are generalizable from the subject samples, these hypotheses have significant implications for the fields of counseling, educational, industrial, and social psychology. Aside from the possibility of enhancing validity, the identification of predictive biographical antecedents unique to particular subgroups will help the psychologist to make more efficient use of the data at his disposal by both stimulating and guiding experimental studies of cause-effect relationships between these biographical dimensions and performance.

For the counselor and educational psychologist, this research

may provide valuable insights into the relationship between certain life history antecedents and later performance. For the industrial psychologist, this study concerns the practical utility of two moderator variables for personnel selection. The importance of these two moderators in view of the Civil Rights Act of 1964 is self-evident. The discovery of BIB prediction patterns unique to both socioeconomic level and ethnic subgroups could provide the social psychologist with operational definitions of these subgroups in terms of BIB performance.

Failure to support the hypotheses considered under category I would suggest either that a) the biographical items used in the study do not tap existing differences between life history antecedents of the subgroups, or b) predictive biographical dimensions are essentially identical for the subgroups. The possibility that predictive biographical dimensions are essentially identical for the subgroups was considered in the hypotheses cited under category II.

METHOD

Subjects

The samples consisted of 1,368 white and 289 Negro male applicants for refinery process jobs at a large petroleum refinery. All applicants were between 18 and 45 years of age. Table 1 indicates the educational background of these samples by race. The educational background was significantly higher for Negro than for white applicants ($\chi^2=31.43$, $p<.001$).

Predictor

A 55-item biographical inventory, the Personnel Questionnaire (Form R-B) was used to predict the criteria considered in this study. This inventory is shown in Appendix A. It was developed by Richardson, Bellows, Henry & Co. in 1965, and covers the areas of home and family background, education, vocational planning and experience, financial background, leisure time activities, health history, and community relations. The reliability of the total inventory has not been estimated. However, the test-retest reliability for 23 of these items has been found to be .82 (N=994) for a sample of applicants similar to the Ss for the present study (Sparks, 1968).

Moderators

Socioeconomic Level (SEL). When Kahl and Davis (1955) factored 19 measures of socioeconomic status, a general factor of socioeconomic level emerged. Occupation loaded most highly on this factor and

TABLE I

PERCENT OF NEGRO AND WHITE APPLICANTS RESPONDING TO THE QUESTION: "THE HIGHEST EDUCATION LEVEL THAT I ATTAINED WAS:

	Negro	White
High School Graduate	32%	39%
High School Graduate Plus Formal Training Other Than College	10	19
Two Years of College or Less	31	27
More Than Two Years of College but Did Not Graduate	17	9
College Graduate"	10	6

accounted for 88% of the total factor variance. These authors agreed with Warner, Meeker & Eells (1949) that occupational level is the best single index of socioeconomic level.

SEL was operationally defined in the present study by the applicant's response to the biographical item: "The occupation which my father followed most of his life may be best described as: A. Business Executive; B. Clerical or Office Worker; C. Farmer or Rancher; D. Professional Man; E. Salesman; F. Store or Shop Owner; G. Service Worker; H. Skilled Craftsman; I. Unskilled or Semi-skilled; J. Other."

Applicants marking items A through F were defined as the upper SEL subgroup, and applicants marking items G through I were defined as the lower SEL subgroup. This dichotomy was consistent with the one used by Kahl and Davis (1955) based on the 1950 Census Bureau Index of Occupations.

Race. Although reference to ethnic group was not available on any of the application materials completed by these samples, a notation of "Negro" was made on the biographical questionnaire of those applicants judged by the test administrators as Negro. This notation was used to subgroup the total sample into white and Negro applicants.

Criteria

Test Performance. All applicants had taken a selection battery consisting of 4 tests: two tests measured general ability, one was verbal (Test of Learning Ability, Richardson, et al., 1963), and the other was non-verbal (Revised Beta Examination, The Psychological

Corp., 1935); a measure of chemical comprehension (Test of Chemical Comprehension, Richardson, et al., 1962); and a measure of basic arithmetic (the Arithmetic Reasoning and Arithmetic Fundamentals sections of the California Achievement Tests, Advanced Form, California Test Bureau, 1957). Although the battery was not intended to be factorially pure, it provided a rough measure of two factors: a spatial reasoning factor (measured by the non-verbal test) and a verbal factor (measured by the chemical comprehension and arithmetic tests). The verbal general ability test consisted of items which measured both factors. (Moore, MacNaughton, & Osburn, 1967).

Raw scores were transformed to T scores for each test on the total applicant sample of 1,657 Ss. These standard scores were then summed across the four tests for each applicant. This total summed score provided the test performance criterion.

Interview Rating. All applicants who had obtained the minimum cut-off scores on the test battery were subsequently interviewed. The interview lasted for one hour and was conducted by at least two managers. At the conclusion of the interview, all applicants were rated by consensus from 4 to 1 as either "excellent," "good," "doubtful," or "poor" candidates for the training program. These ratings were used for the interview criterion.

Physical Rating. Applicants who successfully completed the interview were given a thorough physical examination. The physician rated each applicant from 1 to 4 as either "excellent," "good," "doubtful," or "poor" in meeting the physical requirements of the job.

These ratings provided the criterion of physical fitness.

Classroom Grade Average. Applicants who had successfully completed the previously noted selection criteria were hired as trainees in a Refinery Process training program. The average grade made by these trainees during their six-week classroom training period was used as the measure of classroom performance.

On-Job Performance. An Employee Performance Report was used to measure the performance of these trainees on the job (Appendix B). This report was a modification of a 180-item Employee Performance Evaluation (Form E) developed by Richardson, Bellows, Henry & Company (1953) for this corporation.

For the present study, two 90-item alternate forms of this report were developed. Preliminary research established a Pearson product moment correlation of .96 (N=23) between these two forms, and a point biserial of .96 (N=25) between these performance report scores and "encouraged to resign" and "promoted" employees who had completed the training program. A correlation of .93 was found between the average score made on both forms and the average ratings of job performance for these 25 employees.

Two supervisors who had worked closely with each trainee completed an alternate form of the report. When two supervisors who were judged to be sufficiently familiar with the trainee's performance were not available, one supervisor completed both report forms. The scoring range on any one form was from a maximum of 60 to a minimum of 15 points.

The summed score of both reports was used as the measure of each trainee's job performance.

Procedure

Item Analysis. Two "high" and two "low" groups were separately identified for each criterion measure. Depending on the size of the samples available, these groups were selected using cutting scores which would distinguish high from low criterion scorers while providing enough Ss within the selected truncated criterion distributions (preferably 27%) for a double item-analysis and the later computation of a Pearsonian correlation coefficient. When possible, 30 Ss were randomly selected from those available in the "high" and "low" distributions for each of four groups, Two "high" and two "low." Unless otherwise noted, no S was used twice.

The percent difference in responding to each item on the BIB between one "high" and one "low" group was established. Percent differences significant at the .10 level (two-tailed test) were assigned unit weights. (McNemar, 1962.) Unit weighting was adopted for item responses since differential weighting seldom results in a practical increase in predictive efficiency. (Guilford, 1954.)

Katzell's (1951) double cross-validation design was followed in the item analysis. Biserial correlations were obtained between the sum of the BIB item weights and the high-low comparisons, i.e., the BIB weights obtained from one high-low comparison were used to score the alternate high-low comparison group. These biserial correlations, therefore, represented the efficiency of the BIB weights developed from

one item analysis to predict the criterion dichotomy within the alternate item analysis group. This double cross-validation design was adopted in an attempt to enhance the validity of the BIB items selected for further study.

Validation. Only those items effectively discriminating ($p < .10$) in both high-low subgroup comparisons were used to score the remaining BIBs. Baker's (1952) nomograph for determining the compound probabilities of two tests of significance estimates these common items to be at the .01 level of significance.

Pearson product-moment correlations between the BIB scores and the criterion scores were then computed for Ss not used in either item analysis. This correlation estimated the predictive potential of the BIB for each of the criteria.

RESULTS

Criterion Scores

The means and standard deviations for each criterion are shown in Table II. Unless noted, the t-test statistic (with $p < .05$) was used to assess the significance of the differences discussed in this section.

Test Performance. White applicants scored significantly higher than the Negro sample on the test battery regardless of the SEL considered ($p < .001$). This difference in test performance is consistent with the general findings previously reported by Dreger and Miller (1960, 1965), and the Moore, et al. (1967) study based on a similar sample of applicants who had taken this test battery.

No significant difference was found for the white sample moderated by SEL, nor were differences between upper and lower SEL significant for combined Negro and white comparisons. The lower SEL Negro sample, however, scored significantly higher on the tests than did their upper SEL counterparts ($p < .05$). This finding suggests that although SEL is not associated with the test performance of white applicants to this company, it is associated with the Negro test performance.

Table III indicates the percent responding to each option on the question used to define SEL. The SEL of the Negro sample was significantly lower than that of the white sample ($\chi^2 = 213$, $p < .001$). While 41% of the Negro sample indicated their father had been primarily

TABLE II

CRITERION SCORES DISTRIBUTION SUMMARIES[1]

	Total	White Ss		Negro Ss		Total	
		Upper SEL	Lower SEL	Upper SEL	Lower SEL	Upper SEL	Lower SEL
Test Performance							
Mean	200.18	208.61	208.67	148.97	160.80	200.43	200.40
SD	33.71	28.49	26.61	37.42	33.52	36.33	33.20
N	1657	345	821	57	169	402	990
Interview Rating							
Mean	2.27	2.26	2.26				
SD	.98	.95	.90				
N	337	82	148				
Physical Rating							
Mean	2.65	2.70	2.64				
SD	.75	.85	.88				
N	208	40	128				
Classroom Performance							
Mean	85.76	87.16	85.74				
SD	7.19	5.50	6.48				
N	148	33	97				
On-Job Performance							
Mean	83.97	87.41	84.29				
SD	24.38	25.14	22.33				
N	148	32	96				

[1]Detailed statistics for these criteria are given in Appendix C.

TABLE III

PERCENT OF NEGRO AND WHITE APPLICANTS RESPONDING TO THE QUESTION: "THE OCCUPATION WHICH MY FATHER FOLLOWED MOST OF HIS LIFE MAY BE BEST DESCRIBED AS:

	Negro	White
Business Executive	1%	4%
Clerical or Office Worker	2	3
Farmer or Rancher	16	8
Professional Man	3	2
Salesman	0	3
Store or Shop Owner	2	4
Service Worker	4	3
Skilled Craftsman	18	49
Unskilled or Semi-skilled Worker	41	10
Other"	13	14

employed in unskilled positions, only 10% of the white sample responded affirmatively to this option.

Unfortunately, too few Negro Ss qualified on this pre-employment test battery to continue the analysis of this subgroup beyond this point. Of the original group of 289 Negroes to whom the test battery was administered, only 9 were eligible to continue with the next selection hurdle: i.e., the interview.

Interview Rating. No differences were found for the interview rating of upper and lower SEL white Ss. Both subgroups averaged a rating of 2.26 ("doubtful").

Physical Rating. Upper SEL white Ss were rated slightly less acceptable on the physical examination than lower SEL white Ss. This difference was not significant.

Classroom Performance. Upper SEL white Ss tended to obtain higher grade averages than their lower SEL counterparts. Again, however, this difference was not statistically significant.

On-Job Performance. These Ss had been employed on the job an average of 13.59 months (SD=5.27) following their classroom experience. The average score made by upper SEL white Ss on the Employee Performance Report was insignificantly higher than the score obtained by lower SEL white Ss.

BIB Prediction[1]

Non-Moderated Prediction. Table IV summarizes the correlations obtained between each BIB subtest and the criteria. Inspection of this table reveals the general failure of these BIB items to predict criteria other than test performance. Aside from the possibility that the BIB items used did not tap biographical differences predictive of performance, two other factors could have significantly affected the predictive efficiency of the BIB for these criteria: restriction of criterion range and sampling error.

For the interview and physical criteria, Ss were divided into "acceptable" and "unacceptable" categories since too few Ss were nominated at the extremes to use the 4-point rating scales. This restriction in criterion range occurs with classroom performance also. As Table II indicates, 68% of the Ss were within 7.19 grade points of one another. Such criterion restriction tends to depress validity coefficients.

SEL and Race as Moderators. It is apparent from Table IV that SEL did not moderate BIB prediction of criteria subsequent to test performance. The arguments previously presented citing restriction of criterion range and sampling error would apply equally well to this finding. This section will, therefore, be concerned with the moderated BIB prediction of test performance.

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[1]Fisher's r to z transformation was used to determine the significance of a correlation, and the significance of the difference between correlations (McNemar, 1962).

TABLE IV

CORRELATIONS BETWEEN BIB SCORES AND CRITERIA

Cutting Distributions for Item Analysis	N/Sample (Item Analysis)	(av) r_b	N (for r_{ppm})	r_{ppm}
Test Performance				
No Moderator 27%	30	.91	1537	.63*
Upper SEL 27%	30	.95	282	.61*
Lower SEL 27%	30	.83	870	.62*
Negro 27%	30	.93	169	.46*
White 27%	30	.90	1248	.57*
Upper SEL Negro 35%	10[1]	1.00	27	.45*
Lower SEL Negro 27%	30[2]	1.00	89	.42*
Upper SEL White 27%	30	.89	225	.53*
Lower SEL White 27%	30	.94	701	.58*
Interview Rating				
No Moderator 50%	83	.07		
Upper SEL White 50%	19	.30		
Lower SEL White 50%	49	.09		
Physical Rating				
No Moderator 50%	52	.09		
Upper SEL White 50%	10	.09		
Lower SEL White 50%	32	.10		

TABLE IV (Continued)

Cutting Distributions for Item Analysis	N/Sample (Item Analysis)	(av) r_b	N (for r_{ppm})	r_{ppm}
Classroom Performance				
No Moderator 35%	20	-.04	64	-.16
Upper SEL White 50%	8	.35		
Lower SEL White 35%	15	-.23	37	.02
On-Job Performance				
No Moderator 35%	20	.20	69	.27**
Upper SEL White 50%	8	-.20		
Lower SEL White 35%	15	.02	36	-.11

*$p < .01$.

**$p < .05$.

[1]Stratified sampling: 5 Ss from top 15%; 3 Ss from next 10%; 2 Ss from remaining 10%. 5 Ss were repeated.

[2]Stratified sampling: 16 Ss from top 15%; 14 Ss from next 12%. 20 Ss were repeated.

The influence of criterion range restriction on validity coefficients was noted in the preceding section. The double validation item analysis design of this study tended to remove Ss scoring at the extremes on the test battery from later validation statistics. Because of this criterion restriction, Thorndike's (1949) correction, "R," was used to estimate the validity coefficients for the original subgroup distributions prior to item analyses. An assumption made in the use of this correction formula is that these test battery distributions would be approximated following the selection of Ss for item analyses if larger than N's in each subgroup had been available. Table V compares the uncorrected Pearsonian correlations obtained between the moderated BIB subtests and test performance with these correlations corrected for criterion range restriction.

In every evaluation, use of the Thorndike correction formula resulted in higher estimated validity coefficients between BIB data and test performance. When corrected moderated coefficients are compared with the corrected nonmoderated correlation of .67, subgrouping by upper SEL, Negro, upper and lower SEL Negro, and upper SEL White, significantly increased the efficiency of each unique BIB subtest to predict test performance. Although these results are consistent with the main hypotheses of this study; i.e., that subgrouping by SEL and race would enhance the predictive validity of BIB data, caution must be exercised in interpreting these corrected validity coefficients. It is more likely that realistic validities fall somewhere between these corrected and uncorrected values.

TABLE V

UNCORRECTED AND CORRECTED PEARSONIAN CORRELATION COEFFICIENTS FOR NON-MODERATED AND MODERATED SUBGROUPS

Test Performance	r_{ppm}	R^1
No Moderator	.63	.67
Upper SEL	.61	.77**
Lower SEL	.62	.66
Negro	.46	.85*
White	.57	.61*
Upper SEL Negro	.45	.84**
Lower SEL Negro	.42	.86*
Upper SEL White	.53	.75**
Lower SEL White	.58	.66

*$p < .01$ for the significance of the difference between non-moderated and moderated subgroups.

**$p < .05$ for the significance of the difference between non-moderated and moderated subgroups.

[1] $R = r_{ppm}$ corrected for restriction of criterion range resulting from item analysis (Thorndike, 1949).

For example, it is apparent that subgrouping by lower SEL, white, and lower SEL white, moderators did not significantly increase the validity of the BIB subtests to predict test variance, regardless of whether the corrected or uncorrected validity coefficient value is considered. A separate statistical analysis was performed to examine the possibility that the corrected validity coefficient of .85 for the Negro subgroup was inflated. For this analysis, the BIB items found in the Negro-moderated subtest were used to score the total Negro sample (i.e., the Negro Ss used in the item analyses were repeated in the validation sample). The spuriously inflated correlation of .71 which resulted from this validation process was not significantly different from the non-moderated BIB coefficient of .63 based on the total applicant sample. In summary, the most reasonable conclusion appears to be that SEL and race as moderators did not significantly enhance BIB prediction of test performance.

In the present study, the possible discriminatory nature of the non-moderated BIB subtest against white and Negro subgroups was also investigated. As might be expected from the above data, there is no evidence that such discrimination exists. Table VI indicates the results obtained when the non-moderated BIB items were used to predict the test performance of the white and Negro samples independently. Correlations of .61 for the white Ss, and .64 for the Negro Ss, were obtained. These correlations are of notable interest. The BIB items on which they are based were, in fact, items which differentiated low-scoring Negro Ss from their high-scoring white peers. Since no control for race was present in selecting the criterion groups for the

TABLE VI

PEARSONIAN CORRELATIONS BETWEEN BIB AND TEST PERFORMANCE USING THE NON-MODERATED BIB SUBTEST

Moderator	N	r_{ppm}
None	1657	.63
Negro	289	.64
White	1368	.61

item analyses of the non-moderated subgroup (and white Ss made significantly higher test battery scores than Negro Ss), few Negro Ss (less than 1%) were selected in the item analyses for the upper 27% while 48% of those Ss selected in the bottom 27% test battery distribution were Negro Ss. Although this disparity would tend to exist in validation (and, hence, justify the correlation of .61 obtained), it is remarkable that a test so confounded by race predicted within each racial subgroup efficiently. This result both supports the hypothesis that life history items differentiating successful from less successful Ss are similar for both white and Negro subgroups, and helps to explain the failure of the uniquely developed BIB subtests to enhance BIB prediction of test performance.

For both the interview and the physical, the paucity of Ss scoring at the extremes necessitated dichotomization at the midpoint of their distributions. This tends to decrease the reliability of these criterion measures, and may alone account for the failure to obtain significant correlations between these criteria and BIB data. The failure to predict classroom performance can also be partially attributed to sampling error; the N's used for the item analyses were small. Shrinkage on validation would tend to be large with this increased sampling error.

Predictive BIB Patterns

Since moderated BIB data failed to predict criteria obtained subsequent to test performance, the presentation of predictive BIB patterns will be restricted to BIB items predicting test performance.

Table VII shows the number of BIB items found significant in each evaluation.

SEL as a Moderator. One expectation of this study was that the predictive BIB pattern for successful upper SEL Ss would differ from the predictive BIB pattern for successful lower SEL Ss. Unfortunately, as in the previously discussed non-moderated BIB analysis, comparisons of upper and lower SEL Ss (evaluations 2 through 5) were confounded by race since upper and lower SEL white Ss made significantly higher scores than their Negro peers. Consequently, comparisons of upper and lower SEL Ss will be presented under results based on Ss subgrouped jointly by SEL and race.

Race as a Moderator. Similar predictive patterns of life history antecedents were hypothesized for successful white and Negro Ss (evaluations 6 and 7). Table VIII lists the 6 identical items shared by these Ss. This common predictive BIB pattern suggests that high scoring Negro and white test performers were motivated to achieve via education (e.g., had completed additional education past high school; had aspirations to enter professional occupations). They believed that their teachers probably felt they had the potential to achieve academically, and were permitted by their parents to select the courses they took in school.

When these 6 items were used to predict the test performance for these subgroups, Pearsonian correlations of .51 (N=289) and .46 (N=1368) were obtained for the Negro and white samples, respectively.

TABLE VII

NUMBER OF SIGNIFICANT BIB ITEMS FOUND PREDICTING TEST BATTERY PERFORMANCE FOR EACH EVALUATION

Evaluation Number	Moderator Subgroup	Number of Significant Items
1	None	45
2	Upper SEL	58
3	Lower SEL	27
4	*Upper/Lower SEL: High Test Scores	12
5	*Upper/Lower SEL: Low Test Scores	4
6	Negro	45
7	White	28
8	White/Negro: High Test Scores	38
9	White/Negro: Low Test Scores	56
10	Upper SEL: Negro	19
11	Upper SEL: White	40
12	Lower SEL: Negro	67
13	Lower SEL: White	40
14	Upper SEL White/Negro: High Scores	6
15	Upper SEL White/Negro: Low Scores	21
16	Lower SEL White/Negro: High Scores	36
17	Lower SEL White/Negro: Low Scores	45
18	*Upper/Lower SEL Negro: High Scores	8
19	*Upper/Lower SEL Negro: Low Scores	7
20	*Upper/Lower SEL White: High Scores	16
21	*Upper/Lower SEL White: Low Scores	15

*These comparisons were confounded by the use of BIB item No. 20 to subgroup for SEL.

TABLE VIII

BIB ITEMS PREDICTING TEST PERFORMANCE
COMMON TO NEGRO AND WHITE Ss
(Evaluations 6 and 7)

Unit Weight	BIB Item
-1	The highest education level that I attained was (high school graduate).
+1	My high school teachers probably thought of me as (one who should be encouraged to go as far in school as possible).
+1	At some time or other while I was growing up I had visions of becoming (a professional man - doctor, lawyer, etc.).
+1	During my teens my parents permitted me to make the final decisions concerning (courses I took in school), (use of my spare time).
+1	In an average week I spend at least three hours (listening to radio or records).

Table IX lists the unique BIB items predicting test success for these subgroups.

The unique BIB pattern which emerged for Negro Ss scoring high on the test battery reveals a general academic superiority for these Ss over their less successful peers. High scoring Negro Ss progressed through school during their teens at just a little faster pace than the rest of their sex, and indicated a scholastic high school standing in the top 5%. High school achievement was considered relatively easy, and included both scholastic honors and student government leadership positions. Early career aspirations were academically oriented towards teaching. Both parents were said to belong to a parent-teachers' association. High-scoring Negro Ss also judged that they got along "about average" rather than "very well" with their parents during their teens. Their prior vocational experience included semi-skilled labor, and opportunity for individual thought and initiative was considered one of the most important things to consider in a job. Leisure time activities for successful Negro Ss included watching television and studying or serious reading for self-improvement. One attitude taken by high scoring Negro Ss was that there is some good in most people rather than the belief in a universal goodness endorsed by less successful Negro Ss. High-scoring Negro Ss also differed from their unsuccessful peers in the variety of experiences which they had thus far encountered in their lives. These experiences ranged from selling an order worth $100 or more to participation in a fist fight when angry.

TABLE IX

BIB ITEMS PREDICTING TEST PERFORMANCE UNIQUE TO NEGRO AND WHITE SUBGROUPS (Evaluations 6 and 7)

	Negro	White
The highest education level that I attained was:	More than two years of college but did not graduate. (+1)	Two years of college or less. (+1)
The reason I stopped full-time study in school was because:		I had completed all the education I had planned. (-1) I was not succeeding in school as well as I would have liked. (+1)
The high school subjects which I took and liked very much were:		Chemistry or physics. (+1) Mathematics. (+1)
I failed or had to repeat one or more courses during high school or college because of:		no reason since I did not fail or repeat any courses. (-1)
During my teens, as compared with others of my own sex, my rate of progress through school was:		just a little faster than most. (+1) about the same as most. (-1)
My usual scholastic standing in high school was in the:	top 5%. (+1) middle third. (-1)	I do not know. (-1)
I seriously considered quitting school:		Seldom. (+1)
If I had done the very best I could scholastically:	I would have been average. (-1)	
By the time I had graduated from high school, I had been:	President of my class or the student council. (+1) Chairman of an important student committee. (+1)	

TABLE IX (Continued)

	Negro	White
During my high school years I was a member of:	An honor society or the honor roll. (+1)	A school group--debating team, polit. sci. club, etc. (+1)
During my school years, when it came to doing the things I wanted to do, such as being a member of an athletic team, school club, honor rolls, etc.:	I succeeded about as easily as most. (+1) I had to work hard to succeed. (-1)	
At some time or other while I was growing up I had visions of becoming:	A teacher. (+1)	A chemist. (+1)
The organizations to which my father belonged while I was growing up were:	Parent-teachers' association. (+1) Other organization. (+1)	Fraternal organization. (+1)
The organizations to which my mother belonged while I was growing up were:	Parent-teachers' association. (+1) A card club. (-1)	
During my teens my parents and I got along:	About average; as well as other family groups. (+1) Very well; we agreed on almost everything. (-1)	
While I was growing up, my brothers and sisters and I:	Quarrelled occasionally. (+1)	
When I was a boy, my father helped me in:		Selecting school subjects. (+1)
During my teens, when my family was together for an evening, we would usually:	Talk about personal problems we had during the day. (-1)	

TABLE IX (Continued)

	Negro	White
During my teens my parents permitted me to make the final decisions concerning:	Decorating my room. (+1) Selecting my clothes. (+1) Whom I dated. (+1)	Taking music lessons. (+1)
At some time or other I have worked for pay doing:	Semi-skilled labor, factory or plant work. (+1)	Clerical or office work. (+1)
In looking for a job, the three things I consider most important are:	Opportunity for individual thought and initiative.(+1)	Work in line with my primary interest. (+1) Opportunity for advancement. (-1)
The speed at which I usually work is:	Somewhat faster than most people. (+1)	
If I have an hour or so to kill while waiting in a public place I most frequently:		Read newspapers or magazines. (+1)
The number of fiction books I have read in the past year is:	None. (-1)	
In an average week I spend at least three hours:	Watching television. (+1) Studying or serious reading for self-improvement. (+1) Reading newspapers or magazines. (+1)	Taking extension or correspondence courses. (+1)
The amount of recognition which I receive for my accomphishments is:	Sometimes more than is deserved. (-1)	
In comparison with most other people as an entertainer or leader of the conversation in social affairs:	I am among the few best. (-1)	

TABLE IX (Continued)

	Negro	White
My experience with people tells me that:	There is some good in most people. (+1) There is a lot of good in all people. (-1)	
When I am late for an engagement, I usually:	Make a brief apology. (+1)	
Insofar as automobile driving is concerned:		I am better than most drivers. (+1)
When I get into a competitive situation such as a race or a game or an exam:	I find it impossible to predict in advance how I will do. (+1)	
At some time in my life I have:	Gotten into a fist fight where I was boiling mad. (+1) Make a speech before more than 100 people. (+1) Painted or papered a room. (+1) Rebuilt or assembled a substantial mechanical or electrical appliance or vehicle. (+1) Sold an order or combination of orders totaling $100 or more. (+1)	Driven a car more than 90 miles an hour. (+1)

The BIB pattern unique to the white subgroup appears to reflect a poorer academic record. White Ss scoring high on the test battery indicated they had stopped their schooling after two years of college or less because they were not succeeding academically as well as they would have liked. These Ss had failed or had to repeat one or more courses during high school or college, and were presently taking extension or correspondence courses.

Extra-curricular memberships in high school were restricted to intellectual activities (e.g., debating team). Vocational aspirations had centered in a career as a chemist, and they attached more importance to interesting work than opportunity for advancement.

When the number of significant BIB items found for the Negro and white subgroups (45 vs. 28, respectively) are compared, differences in life history between high and low-scoring Negro Ss appear to be greater than between their white counterparts.

Evaluations 8 and 9 suggest that high-scoring Negro and white Ss were more alike in their BIB responses than their low-scoring counterparts. Thirty-eight items were answered differently by Negro and white Ss scoring in the top 27% of their respective subgroups on the test battery, while 56 BIB items differentiated between the white and Negro subgroups scoring in the bottom 27% of their test battery distributions.

BIB items common to both evaluations 8 and 9 are cited in Table X. These nine items suggest biographical differences between the two ethnic groups which are relatively independent of their test performance. For example, Negro Ss, more often than white Ss, believed

TABLE X

BIB ITEMS COMMON TO BOTH NEGRO AND WHITE
Ss ACROSS TOP-BOTTOM 27% TEST BATTERY
DISTRIBUTIONS
(Evaluations 8 and 9)

Unit Weight[1]	BIB Item
-1	My high school teachers probably thought of me as (a bright student who could be depended upon to do good work).
-1	The teachers I got the most out of in school usually (went into thorough detail and followed my work closely).
+1	While in school, I considered the best time for efficient study to be (in the evenings, right after dinner).
+1	The occupation which my father followed most of his life may be best described as (skilled craftsman).
-1	The occupation which my father followed most of his life may be best described as (unskilled or semi-skilled worker).
-1	At sometime during her life my mother worked for pay for a substantial period of time in (housework).
+1	As a young man, when I returned home from a date, my parents usually (had retired for the night).
+1	In an average week I spend at least three hours (watching television).
+1	At sometime in my life I have (driven a car more than 90 miles an hour).

[1]Negative weights indicate most frequent endorsement by Negro Ss.

that their high school teachers held them in high esteem as bright students who did good work--regardless of their actual test performance. These Ss also felt they benefited most in school from teachers who went into detail and closely supervised their work. While Negro Ss did not indicate a decided preference for study periods, the white Ss selected evenings as the best time for study. The white and Negro Ss also differed on the primary occupation of their fathers; skilled craftsman vs. unskilled or semi-skilled worker were the occupations most frequently cited for white and Negro Ss, respectively. The mothers of the Negro Ss were more likely to have been employed, primarily in housework. White Ss more often than the Negro sample indicated that they spent at least 3 hours a week watching television, and that they had at some time driven a car more than 90 miles an hour.

The BIB items unique to evaluation 8 (i.e., not also found in evaluation 9), are cited in Table XI. These twenty-nine items suggest that high scoring Negro Ss were academically superior to their white counterparts. Although both groups had usually attended college, the Negro Ss had completed at least two years of college as opposed to the white subgroup's attendance for two years or less. These Negro Ss were usually in the top 5% in their scholastic high school standing, while similar white Ss reported their usual standing was in the middle third. Also, high-scoring white Ss more frequently indicated dissatisfaction with their academic progress than their Negro peers. Negro Ss indicated more confidence in their academic ability; studied harder their last two years of high school; and participated more successfully in extra-curricular activities than their white counterparts. Fathers

TABLE XI

UNIQUE BIB ITEMS DIFFERENTIATING BETWEEN WHITE AND NEGRO Ss IN THE TOP-BOTTOM 27% OF THEIR TEST DISTRIBUTIONS[1]
(Evaluations 8 and 9)

	Top 27%	Bottom 27%
The highest education level that I attained was:	Two years of college or less. (+1) More than two years of college but did not graduate. (-1)	
The reason I stopped full-time study in school was because:	I was not succeeding in school as well as I would have liked. (+1)	I completed all the education I had planned. (+1) I needed money to meet family responsibilities. (-1)
The high school subjects which I took and liked very much were:	Chemistry or physics. (+1)	
I failed or had to repeat one or more courses during high school or college because of:		A personality conflict with the teacher. (-1) No reason since I did not fail or repeat any courses. (+1)
My high school teachers probably thought of me as:	One who should be encouraged to go as far in school as possible. (-1)	A timid soul who should be encouraged to speak out. (+1) Nothing in particular, I doubt if they really thought about me. (+1)
My usual scholastic standing in high school was in the:	Top 5%. (-1) Middle third. (+1)	I do not know. (+1)
The feeling that my parents had about the marks I made in school was that they:	Were very pleased. (-1) Were satisfied but thought I should have done better. (+1)	

TABLE XI (Continued)

	Top 25%	Bottom 27%
If I had done the very best I could scholastically:	I would have been at the top of my class. (-1)	I would have been a little above average. (+1)
With respect to studying during my last two years of high school:	I planned and did extra studying beyond that specifically required for my school work. (-1)	
By the time I had graduated from high school, I had been:	President of my class or the student council. (-1) Chairman of an important student committee. (-1)	Something equally noteworthy but not listed here. (+1)
During my high school years I was a member of:	An athletic team. (-1) An honor society or the honor roll. (-1)	
During my school years, when it came to doing the things I wanted to do, such as being a member of an athletic team, school club, honor roll, etc.:		I succeeded about as easily as most. (+1) I had to work hard to succeed. (-1)
At sometime or other while I was growing up, I had visions of becoming:	A farmer or rancher. (+1)	A machinist, electrician or similar craftsman. (+1)
The organizations to which my father belonged while I was growing up were:	Parent-teachers' association. (-1) None of these. (-1)	Other organization. (+1)
When I was growing up my father worked at a job or jobs which required him to:	Have specialized education or formal training. (+1)	Drive an automotive vehicle a great deal. (-1)

TABLE XI (Continued)

	Top 27%	Bottom 27%
While I was growing up my mother was employed outside of our home:		Never. (+1) Before I started to school. (-1)
At sometime during her life my mother worked for pay for a substantial period of time in:	Clerical or stenographic work. (+1)	
The organizations to which my mother belonged while I was growing up were:	Church group. (-1)	Parent-teachers' association. (+1)
During my teens my parents and I got along:		Very well; we agreed on almost everything. (-1) About average; as well as other family groups. (+1)
When I was a boy, my father helped me in:	Learning sports. (+1) School work. (+1)	Learning to drive a car. (+1)
As a young man, when I returned home from a date, my parents usually:		Were very inquisitive. (-1) Scolded me because I did not come home earlier. (-1) Were interested but did not ask many questions. (+1)
During the years I was in high school, most of my spending money came from:		Partly allowance and partly earnings. (+1)
During my teens my parents permitted me to make the final decisions concerning:	Drinking. (+1)	Courses I took in school. (+1) Decorating my room. (+1) Selecting my clothes. (+1) Spending the money I was given or had earned. (+1) Whom I dated. (+1)

TABLE XI (Continued)

	Top 27%	Bottom 27%
When I was in high school, the money which my family had was:		Less than most of the families of my classmates. (-1)
At sometime or other I have worked for pay doing:	Skilled labor - machinist, electrician, etc. (+1)	Semiskilled labor, factory or plant work. (+1)
In looking for a job the three things I consider most important are:		Opportunity for advancement. (+1) Job security. (+1)
The number of fiction books I have read in the past year are:		5 to 9. (+1)
In an average week I spend at least three hours:	Hunting, fishing, boating, hiking, etc. (+1)	Mowing the lawn, doing chores around the house. (+1) Making or repairing something in my shop or other work place. (+1) At sport events such as ball games, racing, etc. (+1)
If I have a difficult decision to make, my typical pattern is to:	Think it over for two or three days. (+1)	
In comparison with most of the people I know, I am able to make new friends:		Much more easily. (-1)
In comparison with other people as an entertainer or leader of the conversation in social affairs, I am:	Below average. (+1)	Among the few best. (-1) About average. (+1)
When I am late for an engagement, I usually:		Have no problem since I am practically never late for engagements. (+1)

TABLE XI (Continued)

	Top 27%	Bottom 27%
Insofar as automobile driving is concerned:		I am not quite as good as most other drivers. (-1)
At sometime in my life I have:	Made a speech before more than 100 people. (-1)	Exhibited something in a competition which I had made, developed or raised. (+1) Hitch-hiked my way for 100 miles or more. (+1) Painted or papered a room. (+1) Rebuilt or assembled a substantial mechanical or electrical appliance or vehicle. (+1) Sold an order or combination of orders totaling $100 or more. (+1)

[1]Negative weights indicate the item was more frequently endorsed by Negro Ss.

of high-scoring Negro Ss were more frequently reported to have been members of a parent-teachers' association than fathers of similar white Ss.

The 47 BIB items unique to evaluation 9 are also cited in Table XI. Both low-scoring Negro and white Ss reported they had ceased full-time study in school. Negro Ss more often cited a financial deterrent to continued education, while similar white Ss indicated completion of their educational goals as their major reason for discontinuing school. Although these white Ss had not failed or had to repeat courses in school, their Negro counterparts reported personality conflicts with their teachers had forced them to fail or repeat courses. The low-scoring Negro Ss also experienced more difficulty in achieving their personal school goals than similar white Ss.

The work history of their mothers differed between the two groups. Mothers of the low-scoring white Ss had never been employed when their sons were growing up, while mothers of similar Negro Ss had worked before their sons had started school. These subgroups also reported differences in their parental relationships during their teens; white Ss getting along "about average" and Negro Ss "very well," with their respective parents. However, it appears that the parents of these Negro Ss were more "inquisitive" and "scolding" regarding their dating patterns than similar white Ss. Striking differences between these two groups also appear in the greater relative freedom for self-determination; more leisure time activities; and greater number of varied life experiences; which characterized the low-scoring white Ss. Socially, however, the Negro Ss rated himself

much higher than his white counterpart as "among the few best" entertainers or leaders of social conversation.

SEL and Race. In this section, BIB items common across SEL subgrouped by race (e.g., items common to both upper and lower SEL Negro Ss) are presented separately.

Table XII lists the BIB items unique to evaluation 10 which distinguished high-scoring upper SEL Negro Ss from low-scoring upper SEL Negroes. It is difficult to discern a specific pattern in the BIB items which emerged from this analysis. The cutting distribution of 35% and sample sizes of 10 for the item analyses (both necessitated by the small N available), together with the probable confounding of upper and lower SEL, may have obscured any specific BIB pattern for this subgroup. In general, the achievement via education pattern, prominent for Negro Ss across SEL, is notably absent in this upper SEL subgroup.

The BIB items predicting test success for upper SEL white Ss are also given in Table XII. The familiar pattern of academic achievement emerged for this subgroup. High-scoring upper SEL white Ss had more frequently graduated from college than their less successful peers. They had also, however, failed or had to repeat one or more school courses, but believed their teachers felt they were bright students who did consistently good work. High school leadership activities included the office of class or student council president.

More BIB items discriminated between high and low-scoring lower SEL Negro Ss than between similar Ss in any other evaluation. This result could be confounded by the nature of the sample selected for the

TABLE XII

PREDICTIVE BIB ITEMS FOR UPPER SEL Ss BY RACE NOT SHARED BY LOWER SEL Ss BY RACE
(Evaluations 10 and 11)

	Upper SEL Negro	Upper SEL White
The highest education level that I attained was:		College graduate. (+1)
The high school subjects which I took and liked very much were:		Mechanical drawing. (+1) Civics or history. (-1)
I failed or had to repeat one or more courses during high school or college because of:		Some other reason. (+1)
My high school teachers probably thought of me as:		A bright student who could be depended upon to do good work. (+1)
During my teens, as compared with others of my own sex, my rate of progress through school was:		About the same as most. (-1)
While in school, I considered the best time for efficient study to be:	I preferred no particular time. (+1)	
By the time I had graduated from high school, I had been:	Leading actor in a school play. (+1)	President of my class or the student council. (+1)
During my high school years I was a member of:	A school musical organization. (+1)	
During my last two years of high school the number of hours per week I spent on athletics, both in and out of school was about:		1 to 4. (-1)

TABLE XII (Continued)

	Upper SEL Negro	Upper SEL White
At some time or other while I was growing up I had visions of becoming:	A truck driver. (-1)	
When I was growing up my father worked at a job or jobs which required him to:		Have specialized education or formal training. (+1)
At some time during her life my mother worked for pay for a substantial period of time in:		Clerical or stenographic work. (+1)
The organizations to which my mother belonged while I was growing up were:		Some other organization. (+1)
When I was a boy, my father helped me in:		School work. (+1)
As a young man, when I returned home from a date, my parents usually:	Scolded me because I did not come home earlier. (-1)	
During my teens my parents permitted me to make the final decisions concerning:	Spending the money I was given or had earned. (+1)	Drinking. (+1) Smoking. (+1) Taking musical lessons. (+1) Use of my spare time. (+1) Spending the money I was given or had earned. (+1)
At some time or other I have worked for pay doing:		Clerical or office work. (+1)
The speed at which I usually work is:	Quite variable, depending on the situation. (+1)	
The number of fiction books I have read in the past year is:		None. (-1) 10 or more. (+1)

TABLE XII (Continued)

	Upper SEL Negro	Upper SEL White
In an average week I spend at least three hours:	Mowing the lawn, doing chores around the house. (+1)	Watching television. (+1)
My experience with people tells me that:	There is some good in most people. (+1)	
I feel dissatisfied with myself:		Hardly ever. (-1)
At some time in my life I have:		Exhibited something in a competition which I had made, developed or raised. (+1) Gambled with more money than I could really afford to lose. (+1)

item analysis. Since 20 Ss each were repeated for the high and low group comparisons, this selection procedure would tend to both increase the frequency of common BIB items in the double item analysis design, and decrease the significance level of each of the items. The items unique to this evaluation are cited in Table XIII. In general, these items suggest that a previous history of high school and college successes differentiated lower SEL Negro Ss scoring high on the test battery from those scoring low. These Ss more frequently reported that their teachers thought of them as bright students who should be encouraged to continue their education, and felt their rate of progress through school had been just a little faster than others of their sex. These lower SEL Ss not only indicated their usual scholastic standing in high school was in the top 5%, but believed they could have been at the top of their class with more effort. Extra-curricular activities were numerous and included class or student council president, and membership in at least three school groups. Success in achieving goals came about as easily as for most of their peers, and vocational aspirations were generally educationally-oriented. Father's occupation was described as unskilled or semi-skilled. Other items which differentiated between the high and low-scoring members of this Negro subgroup included greater freedom from parental authority to make the final decisions concerning academic, leisure, and social activities, and previous personal experiences.

The BIB items predicting success on the test battery for lower SEL white Ss are also given in Table XIII. These items tend to reflect the general academic superiority of successful lower SEL white Ss over

TABLE XIII

PREDICTIVE BIB ITEMS FOR LOWER SEL Ss BY RACE
NOT SHARED BY UPPER SEL Ss BY RACE
(Evaluations 12 and 13)

	Lower SEL Negro	Lower SEL White
The highest education level that I attained was:	High school graduate. (-1) High school graduate plus formal training other than college. (-1)	
The reason I stopped full-time study in school was because:	Of some other reason. (+1)	I completed all the education that I had planned. (-1)
The high school subjects which I took and liked very much were:	Chemistry or physics. (+1) Mathematics. (+1) Natural science, biology or zoology. (+1)	Mathematics. (+1)
My high school teachers probably thought of me as:	A bright student who could be depended upon to do good work. (+1) One who should be encouraged to go as far in school as possible. (+1) A plugger who sometimes learned slowly but remembered well. (-1)	One who put out when I was interested and loafed at other times. (+1) One who should be encouraged to go as far in school as possible. (+1) A plugger who sometimes learned slowly but remembered well. (-1)
During my teens, as compared with others of my own sex, my rate of progress through school was:	Just a little faster than most. (+1) About the same as most. (-1)	Just a little faster than most. (+1)
My usual scholastic standing in high school was in the:	Top 5%. (+1) I do not know. (-1)	I do not know. (-1)
The feeling that my parents had about the marks I made in school was that they:	Were very pleased. (+1)	

TABLE XIII (Continued)

	Lower SEL Negro	Lower SEL White
If I had done the very best I could scholastically:	I would have been at the top of my class. (+1)	I would have been a little above average. (-1)
The teachers I got the most out of in school usually:	Gave me very general instructions or directions and then left me alone to do the assignment. (+1) Were quite specific in their assignments and followed me up from time to time. (-1)	
By the time I had graduated from high school, I had been:	President of my class or the student council. (+1) Chairman of an important student committee. (+1)	
During my high school years I was a member of:	A social club or fraternity. (+1) A school group-debating team, political science club, etc. (+1) An honor society or the honor roll. (+1) An athletic team.(-1)	
During my school years, when it came to doing the things I wanted to do, such as being a member of an athletic team, school club, honor roll, etc.:	I succeeded about as easily as most. (+1) I really didn't try for anything special. (-1)	
During my last two years of high school the number of hours per week I spent on athletics, both in and out of school was about:		None. (-1)

TABLE XIII (Continued)

	Lower SEL Negro	Lower SEL White
At sometime or other while I was growing up I had visions of becoming:	An aviator. (+1) A chemist. (+1) A professional man-lawyer, doctor, etc. (+1) A research scientist. (+1) A teacher. (+1)	A teacher. (+1)
The occupation which my father followed most of his life may be best described as:	Unskilled or semi-skilled worker. (+1)	
The organizations to which my father belonged while I was growing up were:	Other organization.(+1)	
While I was growing up my mother was employed outside of our home:		When I was in high school. (+1)
While I was growing up, my brothers and sisters and I:	Quarreled occasionally. (+1) Got along very well together. (-1)	
When I was a boy, my mother helped me in:		Selecting school subjects. (-1)
As a young man, when I returned home from a date, my parents usually:	Were interested, but did not ask many questions. (+1)	
During the years I was in high school, most of my spending money came from:	Partly allowance and partly earnings. (+1)	
During my teens my parents permitted me to make the final decisions concerning:	Courses I took in school. (+1) Decorating my room.(+1) Selecting my clothes.(+1) Use of my spare time.(+1)	Courses I took in school. (+1)

TABLE XIII (Continued)

	Lower SEL Negro	Lower SEL White
At sometime or other I have worked for pay doing:		Farm worker, farmer, or ranch hand. (-1)
In looking for a job the three things I consider most important are:	Opportunity for advancement. (+1) Opportunity for individual thought and initiative. (+1) Job security. (+1)	Alert and aggressive management. (+1)
The number of fiction books I have read in the past year is:	10 or more. (+1)	
In an average week I spend at least three hours:	Studying or serious reading for self-improvement. (+1)	Reading newspapers or magazines. (+1) At parties or other activities with friends. (+1) Taking extension or correspondence courses. (+1)
If I have a difficult decision to make, my typical pattern is to:	Make it just as soon as the evidence has been weighed. (+1)	
The amount of recognition which I receive for my accomplishments is:	About as much as anyone else. (+1)	
In comparison with most people as an entertainer or leader of the conversation in social affairs, I am:	Above the average.(+1)	
I feel dissatisfied with myself:	Occasionally.(+1)	
When I am late for an engagement, I usually:	Give an explanation only if I am asked for one. (-1)	

TABLE XIII (Continued)

	Lower SEL Negro	Lower SEL White
Insofar as automobile driving is concerned, I:		Am better than most other drivers. (+1)
When I get into a competitive situation such as a race or a game or an exam:		I tend to get upset and do a little poorer than usual. (-1)
At sometime in my life I have:	Driven a car more than 90 miles an hour.(+1) Eaten some exotic food like octopus, rattlesnake meat, fried ants, etc. (+1) Exhibited something in a competition which I have made, developed or raised. (+1) Gotten into a fist fight when I was boiling mad. (+1) Made a speech before more than 100 people. (+1) Painted or papered a room. (+1) Rebuilt or assembled a substantial mechanical or electrical appliance or vehicle. (+1)	Been an officer in some group not connected with school. (+1) Sold an order or combination of orders totaling $100 or more. (+1)

their less successful peers. High-scoring lower SEL white Ss believed their rate of progress through school was just a little faster than others of their sex. There is also evidence that these Ss had become dissatisfied with their progress in school although their past career interests centered in teaching.

The BIB items common to upper SEL white and Negro Ss, and to lower SEL white and Negro Ss, are cited in Table XIV. More items were shared in common by lower SEL Negro and white Ss than by their upper SEL counterparts. Of 59 items predicting high test scores for upper SEL Ss, only 4 of these items (7%) were found in both the upper SEL white and the upper SEL Negro subgroups. In contrast, 107 items were found to predict test success for lower SEL Ss, and 16 of these items (15%) were common to both lower SEL subgroups. The probable confounding of upper and lower SEL Negro Ss in the upper SEL category could have served to obscure any commonality between these Negro and white upper SEL Ss.

An examination of Table XIV suggests that high-scoring lower SEL Ss stressed achievement via education more frequently than their upper SEL counterparts. Most of the 16 items predicting test success for lower SEL Ss seem to deal with either past academic achievement or academically-oriented aspirations (e.g., member of an honor society or on the honor roll; at one time wanted to become a chemist, research scientist, or teacher), and present educational preparation (e.g., spends at least three hours a week studying or serious reading for self-improvement). This BIB pattern for lower SEL Ss indicates that lower SEL Ss scoring high on the test battery report a history of

TABLE XIV

BIB ITEMS PREDICTING SUCCESS ON TEST BATTERY
FOR UPPER AND LOWER SEL SUBGROUPS

Unit Weight	Items Common to Upper SEL White and Negro Ss (Evaluations 10 and 11)
+1	*The highest education level that I attained was (more than two years of college but did not graduate).
+1	*The organizations to which my mother belonged while I was growing up were (parent-teachers' association).
+1	During my teens my parents permitted me to make the final decisions concerning (spending the money I was given or had earned).
+1	In an average week I spend at least three hours (watching television).
	Items Common to Lower SEL White and Negro Ss (Evaluations 12 and 13)
-1	The highest education level that I attained was (high school graduate).
+1	*The highest education level that I attained was (more than two years of college but did not graduate).
+1	The high school subjects which I took and liked very much were (Chemistry or physics), (mathematics).
+1	My high school teachers probably thought of me as (one who should be encouraged to go as far as possible).
-1	My high school teachers probably thought of me as (a plugger who sometimes learned slowly but remembered well).
+1	During my teens, as compared with others of my own sex, my rate of progress through school was (just a little faster than most).
-1	My usual scholastic standing in high school was (I do not know).
+1	During my high school years I was a member of (an honor society or the honor roll).
+1	At sometime or other while I was growing up I had visions of becoming (a chemist), (research scientist), (teacher).

TABLE XIV (Continued)

Unit Weight	Items Common to Lower SEL White and Negro Ss (Evaluations 12 and 13)
+1	*The organizations to which my mother belonged while I was growing up were (parent-teachers' association).
+1	During my teens my parents permitted me to make the final decisions concerning (courses I took in school).
+1	In an average week I spend at least three hours (reading newspapers or magazines), (studying or serious reading for self-improvement).

*Items shared by upper and lower SEL subgroups.

educational successes which differentiated them from their low-scoring SEL peers. Unfortunately, the fact that this pattern of educational achievement did not emerge for upper SEL Ss does not confirm the hypothesis that BIB patterns for high-scoring upper and lower SEL subgroups would differ since, as previously noted, the upper SEL Negro subgroup was probably confounded by father's occupation as farmer or rancher.

BIB items identically predicting success for upper and lower SEL white Ss, and for upper and lower SEL Negro Ss, are given in Table XV. Both upper and lower SEL white Ss scoring high on the test battery had continued their education after high school into college. These Ss nominated chemistry or physics as high school subjects they had liked very much. Their future vocational plans in chemistry, engineering, or research, were consistent with this interest in high school science. Academically, both subgroups of successful upper and lower SEL white Ss reported they were in the upper third of their class, and members of an honor society or the honor roll, while in high school. Other common biographical antecedents shared by these Ss included organizational memberships of father and mother, studying or serious reading for self-improvement at least three hours per week, and heightened performance in competitive situations.

Like their white counterparts, high-scoring upper and lower SEL Negro Ss had continued their education into college, and shared the organizational memberships of both their parents. Both high-scoring subgroups also reported their father had helped them in learning to

TABLE XV

IDENTICAL BIB ITEMS PREDICTING TEST PERFORMANCE
FOR UPPER AND LOWER SEL SUBGROUPS

Items Identical for Upper and Lower SEL White Ss
(Evaluations 11 and 13)

Unit Weight	BIB Item
-1	The highest education level that I attained was (high school graduate).
+1	The highest education level that I attained was (two years of college or less), *(more than two years of college but did not graduate).
+1	The high school subjects which I took and liked very much were (chemistry or physics).
-1	I failed or had to repeat one or more courses during high school or college because of (no reason since I did not fail or repeat any courses).
+1	My usual scholastic standing in high school was in the (upper third but not top 5%).
-1	If I had done the very best I could scholastically (I would have been average).
+1	With respect to studying during my last two years of high school (I did not do much studying because it wasn't necessary).
+1	During my high school years I was a member of (an honor society or the honor roll).
+1	At some time or other while I was growing up I had visions of becoming (a chemist), (an engineer-mechanical, electrical, etc.), (a research scientist).
+1	The organizations to which my father belonged while I was growing up were (fraternal organizations).
+1	*The organizations to which my mother belonged while I was growing up were (parent-teachers' association).
+1	In an average week I spend at least three hours (studying or serious reading for self-improvement).
+1	When I get into a competitive situation such as a race or a game or an exam (I do better than usual).

Items Identical for Upper and Lower SEL Negro Ss
(Evaluations 10 and 12)

+1	*The highest education level that I attained was (more than two years of college but did not graduate).
-1	By the time I had graduated from high school, I had been (captain of a school athletic team).
-1	During my school years, when it came to doing the things I wanted to do such as being a member of an athletic team, school club, honor rolls, etc. (I had to work hard to succeed).

TABLE XV (Continued)

Items Identical for Upper and Lower SEL Negro Ss
(Evaluations 10 and 12)

Unit Weight	BIB Item
+1	The organizations to which my father belonged while I was growing up were (parent-teachers' association).
+1	*The organizations to which my mother belonged while I was growing up were (parent-teachers' association).
+1	When I was a boy, my father helped me in (learning to drive a car).
+1	During my teens my parents permitted me to make the final decisions concerning (whom I dated).
+1	In an average week I spend at least three hours (reading newspapers or magazines), (watching television), (listening to radio or records).

*BIB Items common to White and Negro Ss across SEL

drive a car, cited common authority to select whom they dated, and agreed on the nature of their weekly activities.

More than two years of college without graduating, and mother's membership in a parent-teachers' association, were biographical antecedents predictive of successful test performance across these comparisons of SEL and race.

Evaluations 14 through 17 (Table VII) suggest that biographical differences between white and Negro Ss subgrouped by SEL are minimal for high scoring upper SEL white and Negro Ss. This result may be partly an artifact of the previously discussed sampling problems in the upper SEL Negro subgroup. Since the identical sampling problem applies to comparisons between low scoring white and Negro upper SEL Ss (evaluation 15), it can at least be concluded that fewer BIB differences were found between high-scoring upper SEL white and Negro subgroups than between their low-scoring counterparts. This trend was also repeated for high and low-scoring white and Negro Ss subgrouped by the lower SEL moderator (evaluations 16 and 17).

Table XVI lists those BIB items differentiating between upper SEL white and Negro Ss scoring high on the test battery. High scoring upper SEL white Ss, more often than their Negro peers, reported their mothers had worked in clerical or stenographic positions for a substantial period of time, and that they were permitted to make the final decisions concerning taking music lessons and the use of their spare time. These Ss also more frequently endorsed spending at least three hours per week studying or serious reading for self-improvement, and driving a car more than 90 miles an hour.

TABLE XVI

BIB ITEMS DIFFERENTIATING BETWEEN UPPER SEL WHITE AND NEGRO Ss ON TEST PERFORMANCE[1]

	High Test Scores (Evaluation 14)	Low Test Scores (Evaluation 15)
My high school teachers probably thought of me as:		A bright student who could be depended upon to do good work. (-1)
My usual scholastic standing in school was in the:		I do not know. (+1)
The teachers I got the most out of in school usually:		Went into thorough detail and followed my work closely. (-1)
While in school, I considered the best time for efficient study to be:		In the afternoon just after coming from school (-1)
During my last year in high-school the number of evenings a week that I would go out socially was:		Less than 1. (-1)
The organizations to which my father belonged while I was growing up were:		Church group. (-1)
When I was growing up my father worked at a job or jobs which required him to:		Work different shifts and have different days off. (-1)
While I was growing up my mother was employed outside of our home:	When I was in grammar school. (-1)	When I was in grammar school. (-1) Never. (+1)
At some time during her life my mother worked for pay for a substantial period of time in:	Clerical or stenographic work. (+1)	None of the above, she was never employed. (+1)

TABLE XVI (Continued)

	High Test Scores (Evaluation 14)	Low Test Scores (Evaluation 15)
The organizations to which my mother belonged while I was growing up were:		Card club. (-1) Church group. (+1)
During my teens my parents and I got along:		Very well; we agreed on almost everything. (-1)
When I was a boy, my father helped me in:		School work. (-1)
During my teens my parents permitted me to make the final decisions concerning:	Taking music lessons. (+1) Use of my spare time. (+1)	Attending religious services. (-1) Whom I dated. (+1)
In an average week I spend at least three hours:	Studying or serious reading for self-improvement. (+1)	Watching television. (+1)
When I am late for an engagement, I usually:		Have no problem since I am practically never late for engagements. (+1)
My physical condition is:		Excellent--can tackle any job. (+1)
When I get into a competitive situation such as a race or a game or an exam:		I perform at my usual level. (+1)
At some time in my life I have:	Driven a care more than 90 miles an hour. (+1)	Painted or papered a room. (+1)

[1]Negative weights indicate more frequent endorsement by Negro Ss.

The BIB items distinguishing between low-scoring upper SEL white and Negro Ss are also given in Table XVI. In general, these items primarily reflect education and family history differences between these two groups. Low-scoring lower SEL Negro Ss, more often than their white counterparts, believed their teachers thought of them as bright students, and they reported benefiting most from teachers who went into detail and closely followed their work. These Negro Ss more often considered the afternoon to be the most efficient time to study, and seldom went out socially during high school. Fathers of these Negro Ss were more frequently reported to belong to church organizations, and helped their young sons in school work. These Negro Ss more often said that they got along quite well with their parents during their teens, and that they were permitted to make their own decisions concerning religious attendance. In contrast to this upper SEL Negro subgroup, their upper SEL white peers indicated their mothers had never been employed, and belonged to church rather than card groups. These white Ss also more frequently reported: making the final decisions on whom they dated; spending at least three hours per week watching television; seldom being late for engagements; in excellent physical health; performing at their usual level in competition; and at some time painting or papering a room.

Mother's employment while upper SEL Negro Ss were in grammar school was common to both evaluations 14 and 15. This life history item appears to be unique to upper SEL Negro Ss, independent of test performance, when compared with the upper SEL white subgroups, and most likely reflects the economic status of the American Negro.

A comparison of the BIB items listed in Table XVII indicate that differences between lower SEL white and Negro Ss scoring in the upper 27% of their respective test distributions are principally within the area of prior educational achievement. Negro Ss in this subgroup, in comparison with their white peers, had completed more formal schooling, were considered consistent rather than sporatic students by their teachers, were usually in the top 5% of their high school class, and participated in student government rather than athletic activities. While these Negro Ss seldom considered quitting school, their white counterparts more frequently admitted they had become disillusioned with their educational progress.

Table XVII also lists those BIB items differing between lower SEL white and Negro Ss who scored in the bottom 27% of their respective test battery distributions. Some of the differences found between these Negro and white subgroups, respectively, were: stopped full-time education (needed money for family responsibilities vs. completed all-planned education); teacher's opinion (should be encouraged to continue vs. nothing in particular); scholastic aptitude (in the upper third vs. could have been average); school activities (captain of an athletic team vs. nothing listed in question); vocational aspirations (professional athlete vs. several options); and sibling relationships (got along with very well vs. quarreled occasionally). These differences suggest that low-scoring lower SEL Negro Ss had been forced to terminate full-time study because of outside responsibilities. These Ss were also, apparently, slightly more successful in their prior educational history than similar white Ss.

TABLE XVII

BIB ITEMS DIFFERENTIATING BETWEEN LOWER SEL WHITE AND NEGRO Ss ON TEST PERFORMANCE[1]

	Top 27% Test Scores (Evaluation 16)	Bottom 27% Test Scores (Evaluation 17)
The highest education level that I attained was:	High school graduate plus formal training other than college.(+1) Two years of college or less. (+1) More than two years of college but did not graduate. (-1) College graduate.(-1)	College graduate. (-1)
The reason I stopped full time study in school was because:	I was not succeeding in school as well as I would have liked. (+1)	I completed all the education I had planned. (+1)
The high school subjects which I took and liked very much were:	Chemistry or physics. (+1)	
My high school teachers probably thought of me as:	A bright student who could be depended upon to do good work.(-1) One who put out when I was interested and loafed at other times. (+1)	One who should be encouraged to go as far in school as possible. (-1) Nothing in particular, I doubt if they really thought of me (+1)
My usual scholastic standing in high school was in the:	Top 5%. (-1)	Upper third but not top 5%. (-1)
I seriously considered quitting school:	Seldom. (-1)	
If I had done the very best I could scholastically:		I would have been a little above average. (+1)
The teachers I got the most out of in school usually:		Went into thorough detail followed my work closely. (-1)

TABLE XVII (Continued)

	Top 27% Test Scores	Bottom 27% Test Scores
While in school, I considered the best time for efficient study to be:		In the early morning before going to school. (+1)
With respect to studying during my last two years of high school:	I studied hard before examinations and not much at other times. (+1)	
By the time I had graduated from high school, I had been:	President of a school club. (-1) President of my class or the student council. (-1) Leading actor in a school play. (-1)	Captain of a school athletic team. (-1) Something equally noteworthy but not listed here. (+1)
During my school years, I was a member of:	An athletic team. (+1)	
At some time or other while I was growing up I had visions of becoming:	A shop or store owner. (-1)	An aviator. (+1) A farmer or rancher. (+1) A fireman or policeman. (+1) A machinist, electrician or similar craftsman. (+1) A professional athlete. (-1)
The occupation which my father followed most of his life may be best described as:	Skilled craftsman-carpenter, machinist, etc. (+1) Unskilled or semi-skilled worker. (-1)	Skilled craftsman-carpenter, machinist, etc. (+1) Unskilled or semi-skilled worker. (-1)
The organizations to which my father belonged while I was growing up were:		Other organization. (+1)
At some time during her life my mother worked for pay for a substantial period of time in:	Clerical or stenographic work. (+1) Sales work in a shop or store. (+1) House work. (-1)	House work. (-1)

TABLE XVII (Continued)

	Top 27% Test Scores	Bottom 27% Test Scores
While I was growing up my brothers and sisters and I:		Got along very well together. (-1) Quarreled occasionally (+1)
When I was a boy, my father helped me in:	Learning sports. (+1)	Learning to drive a car. (+1)
As a young man, when I returned home from a date, my parents usually:	Had retired for the night. (+1)	
During my teens my parents permitted me to make the final decisions concerning:	Courses I took in school. (+1)	Courses I took in school. (+1) Spending the money I was given or had earned. (+1) Whom I dated. (+1)
During my last couple of years in high school the number of hours a week I averaged on part-time paid jobs was:		None. (-1)
At some time or other I have worked for pay doing:	Seaman or sailor. (+1) Skilled labor. (+1)	Farmer worker, farmer or ranch hand. (+1)
The main reasons why I left or wanted to leave my last regular employer (excluding part-time and summer) were:		Little chance for advancement. (+1)
In looking for a job the three things I consider most important are:		Opportunity for advancement. (+1) Job security. (+1)
If I have an hour or so to kill while waiting in a public place I most frequently:		Read newspapers or magazines. (-1)

TABLE XVII (Continued)

	Top 27% Test Scores	Bottom 27% Test Scores
The number of fiction books I have read in the past year is:	5 to 9. (+1)	10 or more. (+1)
In an average week I spend at least three hours:	Hunting,fishing,boating, hiking,etc.(+1)	Watching television.(+1) Hunting,fishing,boating, hiking,etc.(+1) Mowing the lawn,doing chores around the house. (+1) Making or repairing something in my shop or other place. (+1)
The amount of recognition which I receive for my accomplishments is:	As much as is deserved.	
In comparison with most of the people I know, I am able to make new friends:	Much more easily.(-1)	With the same effort. (+1)
When I am late for an engagement, I usually:	Have no problem since I am practically never late. (+1)	Give an explanation only if I am asked for it. (-1)
Insofar as automobile driving is concerned:		I am not quite as good as most other drivers. (-1)
My physical condition is:	Good-as good as that of most people.(-1)	
At some time in my life I have:	Borrowed at least $500 other than on a home mortgage or to finance a car. (+1) Driven a car more than 90 miles an hour.(+1) Rebuilt or assembled a substantial mechanical or electrical appliance or vehicle. (+1) Sold an order or combination of orders	Borrowed at least $500 other than on a home mortgage or to finance a car. (+1) Driven a car more than 90 miles an hour. (+1) Eaten some exotic good like octopus, etc.(+1) Quit a job because I was dissatisfied.(+1) Rebuilt or assembled a substantial mechanical or electrical

TABLE XVII (Continued)

Top 27% Test Scores	Bottom 27% Test Scores
totaling $100 or more. (+1)	appliance or vehicle. (+1)

[1]Negative weights indicate item was more frequently endorsed by Negro Ss.

Those BIB items common to both high and low scoring lower SEL white and Negro subgroups point to differences between these white and Negro Ss as a function of their lower SEL status independent of their test performance. Both high and low-scoring lower SEL Negro Ss more frequently reported completing college than their white counterparts. These Negro and white subgroups also differed in the reported occupational level of their fathers; with fathers of the Negro Ss primarily employed in unskilled or semi-skilled work, while skilled craftsman was more frequently cited by similarly subgrouped white Ss as their father's principal occupation. Mother's prior experience in housework was common to both the high and low-scoring lower SEL Negro Ss. High and low-scoring lower SEL white Ss shared parental permission to select school courses, the leisure activities of hunting, fishing, etc., and a variety of personal experiences.

Evaluations 18 through 20 compare test performance across SEL within each ethnic group. The larger BIB differences found in evaluations 14 through 17 for low-scoring white and Negro Ss, relative to their high-scoring peers, were not found when race was held constant. Also, differences between Negro comparisons were fewer than those between similar white subgroups. This finding is consistent with the notion that the upper SEL Negro category was confounded. Evaluations 18 through 20 are confounded by the use of BIB question 20 to subgroup by SEL. Consequently, BIB differences based on responses to question 20 will not be considered.

The BIB items which discriminated between high-scoring upper and lower SEL Negro Ss are cited in Table XVIII. These items suggest

TABLE XVIII

BIB ITEMS DIFFERENTIATING BETWEEN UPPER AND LOWER SEL NEGRO Ss ON TEST PERFORMANCE[1]

	High Test Scores (Evaluation 18)	Low Test Scores (Evaluation 19)
My usual scholastic standing in high school was in the:	Top 5%. (-1)	
If I had done the very best I could scholastically:	I would have been a little above average. (+1)	
By the time I had graduated from high school, I had been:	President of a school club. (-1)	
The occupation which my father followed most of his life may be best described as:	Farmer or rancher. (+1) Unskilled or semi-skilled worker. (-1)	Farmer or rancher. (+1) Unskilled or semi-skilled worker. (-1) craftsman. (-1)
The organizations to which my father belonges while I was growing up were:	Labor union. (+1)	
The organizations to which my mother belonged while I was growing up were:		Professional association. Service club. (-1)
During the years I was in high school most of my spending money came from:		Allowance from the family. (+1)
During my teens my parents permitted me to make the final decisions concerning:		Smoking. (+1)
In an average week I spend at least three hours:	Hunting, fishing, boating, hiking, etc. (+1) Studying or serious reading for self-improvement. (-1)	

[1]Negative weights indicate the item was more frequently endorsed by lower SEL Negro Ss.

that lower SEL Negro Ss had been generally more successful in their high school experiences than their similarly subgrouped upper SEL peers. These lower SEL Ss reported their usual high school standing was in the top 5%, while their upper SEL peers believed they could have been a little above average. The lower SEL S more frequently indicated he had been president of a school club, and that he spent at least 3 hours a week studying or serious reading for self-improvement.

Table XVIII also lists those BIB items which differentiated between upper and lower SEL Negro Ss scoring low on the test battery. The items differentiating between these two subgroups were primarily concerned with home and family variables. Low-scoring upper SEL Negro Ss reported their mothers had belonged to professional organizations rather than the service clubs endorsed by similarly scoring lower SEL Negro Ss. These upper SEL Negro Ss, more frequently than lower SEL Negroes, cited allowance from their family as their principal source of money in high school, and parental permission to make the final decisions concerning smoking.

BIB differences between upper and lower SEL white Ss scoring in the top 27% of their respective distributions are given in Table XIX. Differences between these groups principally reflect differences associated with father's occupation and professional affiliations.

Table XIX also lists the BIB items discriminating between upper and lower SEL white Ss scoring in the bottom 27% of their respective test distributions. These differences cover a wide spectrum of biographical antecedents including educational history, father's occupation and professional affiliations, and leisure activities.

TABLE XIX

BIB ITEMS DIFFERENTIATING BETWEEN UPPER AND LOWER SEL WHITE Ss ON TEST PERFORMANCE[1]

	Top 27% Test Scores (Evaluation 20)	Bottom 27% Test Scores (Evaluation 21)
My high school teachers probably thought of me as:		One, how put out when I was interested and loafed at other times. (+1)
I seriously considered quitting school:		Occasionally. (+1)
By the time I had graduated from high school, I had been:		President of a school club. (-1)
During my last two years of high school the number of hours per week I spent on athletics, both in and out of school, was about:	None. (+1)	
The occupation which my father followed most of his life may be best described as:	Business executive. (+1) Clerical or office worker. (+1) Farmer or rancher. (+1) Professional man.(+1) Skilled craftsman.(-1) Unskilled or semi-skilled. (-1)	Farmer or rancher.(+1) Salesman. (+1) Store or shop owner.(+1) Skilled craftsman.(-1)
The organizations to which my father belonged while I was growing up were:	Farmers association. (+1) Management assoc.(+1) Professional assoc.(+1) University or college alumni club. (+1) Labor union. (-1)	Church group. (-1) None of these. (+1)

TABLE XIX (Continued)

	Top 27% Test Scores	Bottom 27% Test Scores
When I was growing up my father worked at a job or jobs which required him to:	Work different shifts and have different days off. (-1) Entertain visitors or clients often. (+1)	Work different shifts and have different days off. (-1)
The organizations to which my mother belonged while I was growing up were:	Card club. (+1)	
During my teens my parents permitted me to make the final decisions concerning:		Spending the money I was given or had earned. (-1)
The speed at which I usually work is:		Somewhat faster than most people. (+1)
In an average week I spend at least three hours:		Hunting, fishing, boating, hiking, etc. (-1)
At some time in my life I have:		Painted or papered a room. (+1)

[1]Negative weight indicates most frequent endorsement by lower SEL white Ss.

DISCUSSION

Criterion Scores

Test Performance. It was not surprising to find the white sample scoring significantly higher on the test battery than their Negro peers. Failure to find this difference in test performance would be contrary to the majority of similar studies reported in the literature.

In exception to the positive relationship generally found between SEL and aptitude test performance (e.g., Anastasi, 1958), was the finding that upper and lower SEL white Ss did not differ in their test performance, while lower SEL Negro Ss did significantly better on the test battery than their upper SEL counterparts.

Failure to find higher test battery scores for upper than lower SEL white Ss most likely reflects the biased sampling distribution for applicants applying for skilled work in this refinery. It is generally recognized that persons from the upper SEL--regardless of race--are more likely to enter college and professional occupations.

The disparity in SEL between the two races accurately reflects circumstances in this country (cf., Sheppard & Striner, 1966). The response to father's occupation as farmer or rancher, endorsed by 61% of the Negro Ss in the upper SEL category, very likely reflects the rural Southern Negro's traditional role of sharecropper or tenent farmer (Frazier, 1957). If this is the case, it is likely that the social and economic advantages generally associated with greater test

aptitude were more available to lower SEL rather than upper SEL Negro Ss as they were classified in this study.

Other Criterion Measures. Upper SEL white Ss were rated slightly higher than their lower SEL counterparts in both classroom and on-job performance. Although these differences were not significant at an acceptable statistical level, they may reflect attitudinal differences between the two subgroups since both subgroups tended to make the same test battery score. Supportive BIB evidence for this hypothesis is presented later in this paper.

BIB Prediction

Non-moderated Prediction. The statistical considerations of restricted criterion range and sampling error were previously given for the general failure of BIB items to predict criteria other than test performance. In summary, when the criteria of interview, physical, and, perhaps, even classroom performance are considered, it seems reasonable to conclude that sampling error and restricted criterion range influenced predictive BIB potential in the same way these statistics would affect the potential of any other psychological predictor.

It should be noted, however, that some degree of restriction in criterion range is almost inevitable in research where at least part of a total sample or subsample is needed for the item analysis. Criticism could be directed against the use of Katzell's (1951) double cross-validation design in item analysis, Kelley's (1939) classic recommendation to choose distribution cutting scores at the 27% level, and Feldman's (1953) suggestion that each subgroup in the item analysis

consist of at least 40 Ss. Since a minimum of 300 Ss would be required when item analysis was involved, these procedures are probably impractical in most industrial research within the dimensions of Dunnette's (1963a) model. These procedures may, however, be applicable to situations where item analysis can be performed in one plant or population with validation in another, parallel, plant or population.

Usually, however, the researcher quickly depletes his sample population and resorts to either lower cutting scores, fewer Ss in each item analysis, or both, as he attempts to develop unique predictors across the various stages of selection, placement, and job performance. Either practice tends to destroy a primary objective of the researcher to generalize his data across these selection situations. It would seem a far better practice to restrict item analysis to a single step, select reasonable cutting points and sample sizes compatible across the selection process, and concentrate primarily on multiple measures of predictive validity based on the remaining sample. In an empirical study of different-size criterion groups and item analysis, Ely (1951), for example, found only slight differences associated with different percentages of his total distribution.

The slight relationship found between BIB and on-job performance suggests that at least a few of these life history antecedents were consistently associated with job performance. Of more importance, perhaps, is the practical application of the BIB developed in this study in future selection decisions of this refinery. Obviously, it could be used to screen applicants who would be more likely to succeed on the test battery from those who would not. Also, there is evidence that

performance on the test battery, at least, is significantly predictive of on-job success (Sparks, 1968). However, since the relationship between the BIB and this essential criterion of job performance is slight, rigid cut-off scores should not be used.

This non-moderated BIB could be of significant value in recruiting Ss who should be encouraged to apply for work with this refinery. Its use would not need to be restricted to applicants formally applying to the refinery. For example, it could be sent to various groups (e.g., military personnel or persons from minority groups) who might find formal application without encouragement either inconvenient or frightening. The refinery, for example, might be willing to pay travel expenses for inconveniently located military personnel whose BIB scores suggest they would pass the test battery. The general reticence of many Negro persons to apply for positions in industry has been frequently cited (e.g., Lockwood, 1966). The use of a preliminary BIB screening device could help industry to offer concrete encouragement to its minority group applicants by arranging special recruiting procedures to discover potentially qualified applicants.

The distinction between BIB prediction of test performance, and test performance prediction of on-job performance, should be clearly maintained. If the individual tests within the test battery are changed, the use of the present BIB would be unjustified without further validation.

Moderated BIB Prediction. It is appropriate at this point to distinguish between three types of test research strategies: Statistical

prediction; moderated prediction; and moderated prediction involving separate item analysis on the moderator subgroup. Although these three strategies lie along a common dimension of test validation, the relative merits of each approach for BIB research need further clarification.

Statistical prediction is probably the most commonly used research strategy in industry, especially with aptitude tests. Certain tests which have been developed and validated for one group are used to predict similar criteria for other groups, with no attempt made to modify the test for a particular group. Description, in this case, is global and limited to statements regarding the magnitude of the validity coefficients and, perhaps, inferences concerning underlying similarities across populations and criteria. For example, if statistical prediction has been the primary interest in the present study, it would have been sufficient merely to calculate the correlation between the non-moderated BIB items and the criteria for the total group.

Moderated prediction, in contrast, attempts to further define and discover the prediction-criterion relationship for a defined subgroup. With the majority of aptitude tests, this description may provide adequate information regarding the predictor-criterion relationship. With attitude, personality, and BIB data, however, descriptive statements regarding the predictor-criterion relationship may remain inferential, while subgrouping can result in a loss of statistical prediction from reduced sample sizes and restriction of criterion ranges.

This research strategy was followed in the present study when the non-moderated BIB key was used to score the white and Negro subgroups.

The unique strength of moderated group studies which involve item analysis is their potential descriptive value. Comparisons across subgroups relate specific item content, rather than a priori "keyed" scores, to the criteria. Often, however, this research strategy--as in the present study--sacrifices statistical precision severely to obtain descriptive information.

Which research strategy to select would seem primarily to be a question of research emphasis. All three provide information in one area at the expense of information in another.

When a moderated research strategy is chosen, the researcher should first determine if a particular test, without separate item analysis, predicts differentially for a particular subgroup. If it does not (and assuming the researcher is not interested in further descriptive information), that test has been shown to be non-discriminatory for that particular subgroup. In any case, separate predictive validities should be computed when subgroup differences are apparent in either predictors or criteria. Unless these separate validities are obtained, the psychologist cannot be certain if the single validity coefficient is over, under, or accurately estimating the predictor-criterion relationship for any subject subgroup. For example, when minority group members constitute the lower end of the predictor-criterion distributions, a validity coefficient based on the total distribution range of minority and majority group members may be spuriously inflated for either group. Likewise, if the predictor-criterion relationship is inverse for one group and positive for

another, combining the two groups can result in an attenuated validity coefficient inappropriate for either group.

When the researcher is interested in the particular way in which predictors are related to a criterion for a particular subgroup, he can perform a separate item analysis for that subgroup. Also, if a predictor is not associated with a criterion, and there is reason to suspect moderator differences, moderated item analysis should at least be attempted before discarding the predictor.

When the decision is to use moderated item analysis, as in the present study, caution must be exercised in the interpretation of the obtained validity coefficients. This is particularly appropriate whenever use of the moderator results in large decreases in the sample sizes available, since this reduction is associated with increases in sampling error and restriction in the predictor and criterion distributions. For example, it is unrealistic to assume large numbers of minority group applicants are presently available for skilled jobs. (Campbell, 1964). In the six month period covered in this study, less than 20% of the applicants applying to this refinery were classified as Negro, and only 9 of these passed the initial screening test battery.

The situation is not appreciably different when socioeconomic level is used to moderate prediction, especially at later selection and placement stages. When both ethnic group and socioeconomic level (or, perhaps, almost any other joint moderator combination such as "overachiever vs. underachiever" and "single vs. married") are used, general statements of validity based on the decreased sample sizes available must be interpreted cautiously. This is particularly the

case if the researcher shifts his significance levels, distribution cutting scores, and item analysis sample sizes to accommodate the dwindling population following creation of each moderated subgroup. In the present study, for example, Thorndike's correlation formula for restricted criterion distributions probably tended to overestimate the predictive validity of the moderated predictors. One possible reason these inflated validities occurred is that this formula assumes both linearity and homoscedastity for the uncurtailed distribution, and these assumptions may be violated at either end of a distribution.

Another distinction should be made between moderated prediction and moderated prediction which involves item analysis. Moderated item analysis allows the possibility of developing brief but valid tests which are "culture fair." This possibility, of course, is of primary importance in any test research which deals with minority groups. In the present study, 6 BIB items common to both white and Negro Ss were found to predict test performance at a satisfactory level.

Ruch and Ruch (1963) have discussed the concept of maximum validity per unit of testing time. In general, this concept is related to the fact that increases in reliability are not linear in relation to increases in validity. These authors proposed that the use of combinations or batteries of short-time-limit tests, each of which is unique from the other tests in the battery, provides for maximum validity per minute of testing time. The satisfactory correlations for the 6-item BIB, of course, were not challenged by cross-validation. The reliability of these few items would also need to be established. If both validity and reliability were satisfactory, these items could then be

combined with other predictors of the criterion.

One conclusion which results from this study is that BIB prediction is primarily "criterion-specific." The BIB items predictive of test performance in the present study, for example, were primarily items dealing in a logical way with past test success. In fact, the "criterion-specific" nature of BIB prediction helps to explain the failure of the particular BIB used in the present study to predict interview or physical ratings, since few of the BIB items dealt with either of these dimensions.

Many of the BIB items, however, did relate to previous academic classroom performance, yet failed to predict on-job classroom performance. Apart from the statistical considerations previously cited, it can be hypothesized that significant differences existed between this on-job classroom and a regular high school or college classroom. Most of the courses taught in the on-job classes were practical courses dealing with the operation of petroleum refining rather than any emphasis on theory. Competition among peers could also be assumed to be minimal in on-job classes. Examinations could be rescheduled until the trainee felt prepared, and minimum passing scores were based on test scores independent of group performance. Also, the on-job classroom instructors would work individually with trainees in difficulty to help them succeed in the program.

In summary, this study tends to indicate that the generalizability of BIB data across multiple criterion measures (e.g., case 2, figure 1, in this study) is limited primarily to the dimensions of the biographical antecedents within the BIB test battery, and the

relevance of these dimensions to the criteria.

Earlier in this study it was stated that failure to find enhanced BIB prediction by subgrouping would suggest either: a) the BIB items did not tap existing differences between life history antecedents of the subgroups, or b) predictive biographical dimensions were essentially identical for the subgroups. In regard to the prediction of criteria other than test performance, two reasons probably account for the failure of these moderated BIB subtests to enhance prediction: the "criterion-specific" nature of biographical prediction as previously discussed; and the statistical restrictions resulting from increased sampling error and restricted criterion distributions. Therefore, this study does not provide evidence relative to either of these suggestions for criteria other than test performance.

With regard to BIB prediction of test performance, this study suggests that the general failure of moderated BIB prediction to enhance non-moderated BIB prediction resulted from the inability of the items to tap unique differences between life history antecedents of the subgroups since the predictive biographical dimensions for these subgroups were relatively identical. This conclusion supports the generalizability of BIB data predicting a criterion across populations (i.e., case 3, figure 1).

BIB Prediction Patterns

At least three issues are involved in any interpretation of the BIB patterns found in this study: the truthfulness of each Ss responses; the composition of the applicant subgroups; and the relative significance of the BIB items resulting from each moderated analysis.

With respect to "truthfulness" of response, Klein and Owens (1965) have shown that Ss aware of the criterion, "creative research scientist," could successfully fake a biographical inventory. The previously cited stability coefficient of .82 for 23 of the BIB items would tend to suggest that applicants are at least consistent, if not honest, in their responses. Even if the responses to this BIB were faked by the Ss in this study, predictive BIB responses would still reflect the consistently different ways in which the subgroups felt they should respond.

As previously noted, failure to find the usual positive relationship between SEL and test aptitude suggests that those applicants who were Ss in this study represent a biased sampling of upper and lower SEL populations. Further evidence for the unrepresentative nature of this population is found in the significantly higher education level attained by Negro, rather than white, Ss. This sampling bias most likely reflects the disparity in economic and vocational opportunities available for Negro and white, upper and lower SEL, individuals in our society. In this regard, any interpretation of the predictive BIB pattern for "upper" SEL Negro Ss must be tempered with the high probability that these Ss represent both upper and lower socioeconomic backgrounds. For most of these Ss, their father's reported occupation of "farmer or rancher" probably best represents the rural Southern Negro role of sharecropper or tenement farmer.

Comparisons across racial groups should also be interpreted with caution. In the present study, Ss were not matched on test performance. BIB items predicting this criterion, therefore, are

actually predicting performance which may be exceptional only within a particular subgroup. Dreger and Miller (1960), in particular, have cautioned that Negro and white Ss matched on socioeconomic variables may not be accurately equated since caste as well as class differences exist between the two groups. And, as previously noted, the socioeconomic level of the Negro Ss as defined in this study was significantly lower than the SEL of white Ss.

Finally, the significance of the BIB items is affected by the sample sizes in each item analysis and the sample selection, i.e., some Ss were repeated in the item during cross-validation.

In summary, the generality of comparisons across subgroups--or even within a particular subgroup--are somewhat restricted and more suggestive than definitive.

For the purpose of this discussion, BIB differences within and between subgroups will be classified into the following biographical categories: Educational History; Financial Background; Home and Family Background; Leisure Time Activities; and Vocational Planning and Experience.

Educational History. In both their 1960 and 1965 comparative reviews of Negroes and whites in the United States, Dreger and Miller comment on the similarities found in the value systems of both races. The predictive BIB patterns for high-scoring Negro and white Ss in this study support Dreger and Miller's position. High-scoring Negro and white Ss in this study shared a similar emphasis on educational achievement which differentiated them from their less successful peers.

In those instances where these high-scoring Ss are directly compared, however, the Negro Ss emerged as the more educationally successful both academically and in extra-curricular activities. Of the several factors which could account for this finding, it is probable that the increased vocational opportunities available to whites relative to Negroes in our culture is most significant. It is doubtful if whites who had shared the pattern of success found in the high-scoring Negro Ss in this study would be applying for this refinery position. In fact, when high-scoring Negro and white Ss were compared, the white Ss more often admitted they were dissatisfied with their progress in school, were in the middle third rather than the top 5% of their high school class, and had less often graduated from college. It is possible that the BIB items would have been more often identical for both the white and Negro Ss if the more academically successful whites had been included in this study.

Still unsolved, however, is the relative disparity between the two races in the relationship between their biographical antecedents and test performance. At least as they chose to define themselves, the high-scoring Negro Ss had almost reached a "ceiling" on possible academic achievement. When compared with either their white or Negro peers, they had more frequently been in the top 5% of their high school class and outstanding high school leaders. Yet, in test performance, (even when the top 27% distributions are considered), the Negro Ss in this study were significantly lower than their white peers. Even if the generally recognized inferiority of the Negro-segregated education system is accepted as a plausible answer for this difference, it seems obvious,

as Dreger and Miller have remarked, that "Intelligence test differences between Negroes and whites cannot mean the same as they mean between two groups of whites." (Dreger and Miller, 1960, p. 373.)

Just as high-scoring Negro Ss appear to reflect an educational background superior to their white counterparts, low-scoring Negro Ss seem even less successful in educational history than similar whites. These Negro Ss had more frequently failed in their school work and had to work harder to succeed than similar white Ss.

Several authors have commented on the emphasis which Negroes place on education. In this regard, it is significant that between these low-scoring subgroups, Negro Ss cited a financial deterrent to their continued education while their white peers seemed satisfied with their present educational attainment.

Comparison across both races independent of test performance suggests that Negro Ss were, more often than their white peers, considered by their teachers as bright students who did good work, and who learned most from teachers who went into detail and followed their work closely. Lott and Lott (1963), in interviews with Negro and white high school leaders, found that "Significantly more Negro than white leaders mentioned teachers as having rewarded and encouraged their academic efforts and, especially, as having prodded them to do better" (p. 110). From the data obtained in the present study, it would appear that this difference in teacher perception and influence was more associated with ethnic group than test performance. This finding suggests that Negro teachers may more frequently highly regard and follow their students' progress than white teachers.

Within each ethnic group, few differences in educational history were found between Ss subgrouped by SEL. For Negro Ss, this finding supports the assumption that the upper SEL category was confounded by Ss whose socioeconomic background was lower than the lower SEL category. For white Ss, this finding is consistent with the hypothesis that the upper SEL subgroup represented a biased sampling of the upper SEL population. One difference, however, between upper and lower SEL white Ss may partly account for the slightly higher classroom and on-job performance scores for upper SEL white Ss. For these upper SEL Ss, their teacher's perception of them as bright students who could be counted on to do good work differentiated high from low scorers on the test battery. For similar lower SEL white Ss, their teacher's perception was of one who worked when interested and loafed at other times. It is possible that these differences in attitude toward school work continued into the job situation.

Between each ethnic group subgrouped by SEL, fewer differences were found for the high-scoring members of these groups than their low-scoring peers. The consistent nature of this observation, both across ethnic groups and within these groups subgrouped by SEL, supports not only Cassens' (1966) hypothesis that successful members of a culture, organization, etc., share common biographical antecedents, but introduces the complementary hypothesis that unsuccessful members are more dissimilar.

No differences in educational history were found between high-scoring upper SEL white and Negro Ss. This result probably reflects the biased nature of these samples. Differences in educational history

between lower SEL white and Negro Ss scoring in the top 27% of the test battery distribution are similar to those found for white and Negro comparisons not subgrouped by SEL. In general, the high-scoring Negro Ss reveal a pattern of educational achievement consistently superior to their white peers. The general educational inferiority of the low-scoring Negro Ss when compared with similarly scoring white Ss was not apparent when these Ss were subgrouped by lower SEL. Both high and low-scoring lower SEL Negro Ss had more frequently completed college than their white peers. Again, this finding best demonstrates the biased nature of the applicant sample.

Financial Background. The disparity in SEL between the white and Negro Ss has been previously noted. Few specific differences in financial background were found in the BIB comparisons. Since many of the BIB differences found in vocational and family backgrounds are related to this disparity in economic status, it would appear that the failure to find differences on this dimension reflects the insensitivity of the BIB employed. Low-scoring Negro Ss, when compared with similar white Ss, did indicate, however, that they were forced to discontinue their education because they needed money to meet family responsibilities and that they felt their families generally had less money than most of their classmates. Since this difference appeared only for low-scoring Negro Ss, compared with similarly scoring white Ss, it would seem that financial background was more relevant between the ethnic groups than within, and of more importance to less successful Negro Ss than to more successful Negro Ss.

Home and Family. Both high-scoring Negro and white Ss not subgrouped by SEL were, more often than their low-scoring peers, permitted by their parents to make their own decisions concerning the courses they took in school and the use of their spare time. Implicit in these BIB items is the probability that these Ss were dependable students and sons who conformed to "middle-class" standards of behavior. When both ethnic groups were moderated by SEL, their mothers' participation in a parent-teacher's association was shared by all four groups as predictive of high scores on the test battery. The generalizability of this item strongly emphasizes the role of the mother in the transmission of educational values (e.g., Hyman, 1963).

One of the BIB differences on this dimension between high-scoring Negro and white Ss concerned parental reactions to class grades. White Ss more frequently reported that their parents had been "satisfied," while Negro Ss reported their parents "very pleased" with their marks in class. In view of the persistent pattern of superior academic achievement by the Negro Ss it would appear that both groups of parents were responding realistically.

Parents' membership affiliations between these Ss across all high-scoring comparisons probably reflect cultural differences between these Negro and white Ss. High-scoring Negro Ss more frequently reported their fathers belonged to a parent-teacher's association and their mothers to a church group than the parents of similar white Ss. Father's more frequent membership in a parent-teacher's association for the Negro Ss, however, is probably a very significant reflection of the increased emphasis which the Negro culture places on educational

achievement as a means to social and economic mobility. In contrast, similar white Ss more frequently reported their father had helped them in learning sports.

When common BIB patterns reflecting SEL are compared for high and low-scoring Negro and white Ss, it appears that these status differences were less predictive of test performance than might be expected from the literature (e.g., Eells, Davis, Havighurst, Herrick, & Tyler, 1951). Regardless of test performance, Negro Ss more frequently reported their fathers' employment in unskilled occupations and their mothers' employment in housework. These data could, once again, reflect the biased sampling of these populations rather than a non-significant relationship between test aptitude and SEL.

In general, familial differences are more striking between lower-scoring members of these groups than for higher-scoring Negro and white Ss. Fathers of low-scoring Negro Ss were more frequently employed as truck drivers and worked shift work than similarly scoring white Ss. Lower scoring Negro Ss also seemed to get along much better with their parents and siblings while they were growing up than did their white peers. This finding suggests that the psychological adjustment for below-average performers may be easier for Negroes than whites within their respective cultures.

The family background dimension more frequently differentiated ethnic groups moderated by SEL than any other BIB dimension considered in this study. This results partly from an artifact of the methodology employed; i.e., one of the BIB items was used to define SEL. High-scoring upper SEL white Ss reported fathers' affiliation in various

professional organizations which distinguished them from their similarly scoring lower SEL peers, whose fathers were primarily members of a labor union. In striking contrast, however, is the absence of these affiliations when upper and lower SEL low-scoring white Ss were compared. When these data are considered together with the differences in occupation level between the high and low-scoring groups, it is apparent that--at least for the upper SEL category--higher socioeconomic status was associated with higher test performance for the white Ss. Sons of business executives, professionals, and clerical or office workers were more likely to be high than low scorers on the test battery, whereas sons of farmers, salesmen, and skilled craftsmen were both high and low test performers. Contrary to this positive relationship between SEL and test performance, however, was the finding that sons of unskilled workers were more frequently high scorers than sons of skilled craftsmen, while sons of store or shop owners were most often low scorers.

Within the Negro comparisons of upper and lower SEL, differences associated with socioeconomic status and test performance were less apparent than for white Ss. In contrast to the comparisons based on the white samples, however, sons of unskilled workers were in both high and low test distributions, although, once again, sons of skilled craftsmen were more frequently low scorers. The paucity of differences between high and low-scoring Ss in these two upper and lower SEL subgroups reaffirms the position that the distance in SEL between these two groups was relatively small.

Leisure Time Activities. When all comparisons between white

and Negro Ss made in this study are considered more leisure time activities are cited by white than Negro Ss. In most cases, this difference is not associated with test performance; instead, it appears to be most strongly associated with the relatively greater social freedom available to whites in our culture. For example, white Ss more frequently than Negro Ss (independent of test performance), reported spending at least three hours a week watching television and hunting, fishing, boating, etc., and at some time in their life, driving a car more than 90 miles an hour, borrowing at least $500, and rebuilding or assembling a mechanical or electrical appliance or vehicle. As in the home and family BIB dimension, differences in leisure activities were more numerous between low-scoring Negro and white Ss. It would appear that Negro Ss in this study were more restricted both in the variety and number of their leisure activities than the white Ss, and that this restriction was even more prominent for low test scorers. An alternate hypothesis, but unlikely, would be that the BIB used in this study did not tap leisure activities relevant to the Negro culture. The evidence does not support this hypothesis, since many of these activities were cited by Negro Ss and predicted high test performance within the Negro subgroup.

It is also apparent that leisure activities were more similar for both high and low-scoring white Ss since few of these items differentiated between their test performance. It would appear, therefore, that the number and variety of leisure activities were significant predictors of test performance for Negro Ss, but that between Negro and white comparisons, white Ss had more frequently participated in

these activities--independent of test performance. This finding does not agree with the Lott and Lott (1963) study in which the leisure activities of Negro and white high school leaders differed only in the higher frequency of dating for the white leaders. In regard to the predictive nature of these items within the Negro subgroup, these authors have proposed that "The Negro youth devotes considerably more time than the white youth to relatively nonproductive 'fooling around' activities with friends or by himself" (Lott & Lott, 1963, pp. 133-134). The data from the present study suggest that this hypothesis applies more to less successful, than highly successful, Negro students.

No consistent pattern was found within each ethnic group moderated by SEL. This would suggest that the leisure activities of these groups were not associated with differences in socioeconomic level as it was defined in the present study.

Vocational Planning and Experience. Dreger and Miller (1960) reviewed several studies which pointed to unrealistically high vocational aspirations for Negroes. In the previously-cited study by Lott and Lott (1963), their Negro and white students shared similar vocational goals, and the Negro students seemed to have realistic job expectations. While the present study does not provide definitive data on this subject, it appears that high-scoring Negro and white Ss in this study had at one time shared similar occupational goals, and that at least prior consideration of these occupations was predictive of high test performance. In general, both groups shared an interest in the higher status occupations such as lawyer or doctor, chemist,

research scientist, or teacher. When these ethnic groups were compared, high scoring Negro Ss had more frequently considered the role of a store or shop owner, while similar white Ss endorsed engineering. In contrast, for the low-scoring lower SEL comparison, Negro Ss more frequently indicated they had thought of becoming professional athletes, while white Ss had more frequently considered the lower status occupations of aviator, farmer or rancher, fireman, or policeman, and craftsman. It should be noted, however, that these responses only indicate that these Ss at some time or other while they were growing up had had "visions" of becoming members of these occupations. Considering the nature of this item, it is, perhaps, even more striking that these occupational goals tended to parallel the test performance of these Ss. With one exception, this item did not discriminate within ethnic groups moderated by SEL; i.e., professional athlete was endorsed more frequently by low-scoring upper SEL than lower SEL white Ss.

Prior work experience was predictive of high test performance within both ethnic groups, with semi-skilled and clerical or office work predicting high Negro and white test performance, respectively. These results are inconclusive, however, since they may either reflect the limited vocational opportunities available to Negroes or the failure of these Negro Ss to be employed in these particular occupations. Comparisons across ethnic groups did not clarify this relationship.

For high-scoring Negro and white Ss in this study, the importance they placed on various job factors distinguished them from their less successful peers within each respective ethnic subgroup.

High-scoring Negro Ss, more frequently than their low-scoring peers, cited opportunity for advancement, job security, and opportunity for individual thought and initiative as the three most important factors to consider in a job. Within the white subgroup comparisons, work in line with their primary interest and alert and aggressive management were more frequently cited by the high-scoring white Ss, while their low-scoring peers selected opportunity for advancement as a more important job consideration.

Comparisons across ethnic groups did not reveal job-factor preferences between high-scoring Negro and white Ss. This finding is contrary to several studies which have reported significant differences in financial emphasis and job security for Negroes over whites (e.g., Lott & Lott, 1963; Singer & Stefflre, 1956; Sussman & Yeager, 1950). Between Negro and white Ss scoring low on test performance, however, two of the job factors, opportunity for advancement and job security, were more often selected by white than Negro Ss. No differences were found in responses to this item within ethnic groups moderated by race. It would seem from these data that job factors differentially predicted test performance within ethnic groups, but that high-scoring Negro and white Ss attached similar importance to these job factors.

Contributions of this Research

This study has provided evidence that:

1. The nature of biographical prediction is rather specific to a particular criterion, with limited generality across criteria. This

finding suggests that the practical application of BIBs within the framework of Dunnette's (1963a) prediction model is limited. A BIB predictive across these job dimensions would tend to be too long to be of practical use in industry.

2. There is generality of BIB dimensions across populations. In particular, biographical dimensions predicting test performance seem to be similar for upper and lower SEL white and Negro applicants for this position; biographical differences are greater between the less successful than successful members of these samples.

3. The biographical dimension, achievement via education, seems most strongly to predict test aptitude for Negro and white applicants. This finding again supports the hypothesis that biographical data are criterion-specific.

4. With regard to the use of moderated item analysis designs in predictive research, the statistical restrictions resulting with this design may limit the usefulness of this research strategy to population description rather than statistical prediction.

5. Failure to consider a methodological problem in studies dealing with Negro and white comparisons can lead to incorrect conclusions regarding biographical differences between these groups. Investigators in this area should design their research to distinguish racial differences associated with a criterion from racial differences unrelated to a criterion. For example, in the Lott and Lott (1963) research, interview data obtained from outstanding leaders within these groups matched for intelligence were compared. Among other differences, these authors found that the Negro leaders, more often than their white peers,

indicated they were significantly influenced and prodded by their teachers. Implicit in this finding is the conclusion that teacher's influence was predictive of Negro, but not white, leadership ability. When both high and low-scoring Negroes were compared in the present study, however, this item was shown to be independent of test performance. Biographical studies where a particular criterion is selected for comparison between Negroes and whites should, at least, include Ss with high and low criterion distributions within each ethnic group. Without this control, the results from these studies could reflect caste differences erroneously ascribed to a predictor.

Implications of this Research

Between these samples, the predictive BIB items within these biographical dimensions seemed to parallel the biased nature of these applicant samples. It should be noted, however, that this bias accurately reflects the social and racial opportunity differences within our present society. This bias was most striking in the Negro samples. Available census data suggest that these Negro applicants represented less than half of their Negro peers, since all of them had at least graduated from high school (Rainwater & Yancy, 1967).

1. The disparity both in predictive biographical dimensions and test performance between the white and Negro applicants is difficult to interpret. Because of limited employment opportunities for Negroes in comparisons with whites, applicants from the former group tended to represent a higher level of educational attainment. In spite of this, their test performance was depressed. Two possible explanations are:

An inferior educational system for Negroes; Negro applicants may have simply faked their BIB responses. This last alternative does not appear tenable. Both within and across the Negro-white samples, low test scores were generally consistent with academic performance. In summary, if: a) educational achievement within these subcultures is considered at least equally difficult (and there is reason to assume this achievement is even more difficult for the Negro); and, b) this achievement is predictive of test aptitude (which is, in turn, predictive of job performance for white Ss), then, c) it is likely this industry is failing to hire Negro applicants with the potential to succeed on the job.

2. These results point to abnormal frustrations for these Negro applicants. In view of the voluminous literature available on level of aspiration and performance (e.g., McClelland, 1958), the disparity for these Negro applicants between their past history of outstanding successes, and their present inability to qualify for a skilled occupation, must have severe and damaging effects--effects frequently cited in riot and civil disorder reports.

Directions for Future Research

Based on the data obtained from this study, research with biographical prediction across dissimilar criteria does not appear profitable. Life history prediction of similar criteria across populations, however, has been shown to be fruitful both in increasing our understanding of biographical prediction, and the relationship of this prediction to populations.

1. This study started with biased population samples. It would be hypothesized that a closer matching of these samples on either the

criterion or predictor would result in more similarity in biographical prediction for these samples.

2. The actual socioeconomic distance between these samples does not appear to be meaningful. A less biased sampling of socioeconomic levels might reveal the more consistent pattern of greater biographical differences between socioeconomic levels than ethnic groups.

3. A "culturally-common" 6-item BIB was developed in this study for Negroes and whites. More research is needed to establish the reliability and validity of this instrument for possible inclusion in a selection battery.

4. This study dealt with the prediction of test performance for white and Negroes at a southern refinery. It is not known whether these results hold for other subgroups from different geographical locations.

5. This study started with a survey instrument and identified the predictive items in that instrument. It would be both profitable and feasible to perform a factor analysis on these items to establish statistical, rather than intuitive, biographical dimensions. Unlike studies similar to the one by Cassens (1966), these dimensions would by design reflect life history patterns predicting of performance on the test battery administered in this particular company.

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A P P E N D I C E S

APPENDIX A

PERSONNEL QUESTIONNAIRE

QUESTIONNAIRE INSTRUCTIONS

Included here are a number of questions about yourself, your family, your experiences, your attitudes and interests. You might well view the questionnaire as a paper-and-pencil interview. Each statement is followed by three or more alternate answers from which you will pick those which apply to you. You may rightfully feel that some of the questions do not apply to you exactly. For example, some refer to your parents; these should be answered in terms of guardians or step-parents if this happened to be your situation. You should consider the general intent of each of the questions and answer accordingly.

For some of the questions you are to select one answer only. For others you may select more than one if two or more are applicable to you. These questions are followed by "(Mark all that apply)" appearing in parentheses immediately after the question. Mark only one answer unless this statement appears. There is no time limit, but do not spend too much time on any one question.

USE OF THE ANSWER SHEET

Place the separate answer sheet under your test booklet. Open the booklet to page 1. Pull out the answer sheet so that the column headed "Page 1" lies next to the corresponding "Page 1" printed in the upper right corner of the booklet. Complete the lining-up of the answer sheet by making sure that the arrows at the ends of the lines printed in the booklet match with those printed on the answer sheet. You are now ready to begin page 1.

After you have made your decision as to the best answer to the first question, note the letter (A,B,C,D,etc.) corresponding to the alternative that you have selected. Then, in the column of the answer sheet headed "Page 1," put an "X" in the square opposite the letter you have selected.

When you have answered all the questions on page 1, turn to page 2 of the booklet. Again, pull out the answer sheet until the column headed "Page 2" is visible. Again, line up the arrows printed in the booklet with those printed on the answer sheet. Continue marking as before, repeating the procedures until you have finished page 10. Remember, mark only the ONE BEST answer for each question unless otherwise requested. Do not skip any questions.

Your answers will be keypunched into IBM cards. A carbon copy of your responses will be used for this purpose. If you wish to change an answer, please do not try to erase. Instead, draw a horizontal line through the response you wish to delete and mark your other choice in the normal fashion.

Do not make any marks on the booklet itself.
Be sure your name, location and today's date is on the answer sheet.

Turn the page and begin.

1. The highest education level that I attained was:
   A. High school graduate. B. High school graduate plus formal training other than college. C. Two years of college or less. D. More than two years of college but did not graduate. E. College graduate.

2. The reason I stopped full-time study in school was because:
   A. I completed all the education I had planned. B. I believed that work experience would be more satisfying. C. I needed money to meet family responsibilities. D. I was not succeeding in school as well as I would have liked. E. I thought I could combine work and part-time school study. F. Of some other reason.

3. The high school subjects which I took and liked very much were (Mark all that apply)
   A. Bookkeeping. B. Chemistry or physics. C. Civics or history. D. English or literature. E. Foreign language. F. Mathmetics. G. Mechanical drawing. H. Natural science, biology or zoology. I. Shop. J. Speech or public speaking. K. Something not listed here.

4. I failed or had to repeat one or more courses during high school or college because of (Mark all that apply)
   A. Dropping the course due to illness or some other reason. B. Inability to master the subject matter. C. A personality conflict with the teacher. D. Some other reason. E. No reason since I did not fail or repeat any courses.

5. My high school teachers probably thought of me as (Mark all that apply)
   A. A bright student who could be depended upon to do good work. B. A plugger who sometimes learned slowly but remembered well. C. One who put out when I was interested and loafed at other times. D. One who was not really interested in school work. E. One who concentrated on extracurricular and social activities. F. One who should be encouraged to go as far in school as possible. G. As a timid soul who should be encouraged to speak out. H. A brash individual who should be taken down a peg or two. I. Nothing in particular, I doubt if they really thought about me.

6. During my teens, as compared with others of my own sex, my rate of progress through school was:
   A. Much more rapid than most. B. Just a little faster than most. C. About the same as most. D. Just a little slower than most.

7. My usual scholastic standing in high school school was in the:
   A. Top 5%. B. Upper third but not top 5%. C. Middle third. D. Lower third. E. I do not know.

8. I seriously considered quitting school:
A. Frequently. B. Occasionally. C. Seldom. D. Almost never.

9. The feeling that my parents had about the marks I made in school was that they:
A. Were very pleased. B. Were satisfied but thought I should have done better. C. Did not care about the actual marks as long as I did my best. D. Did not care about marks as long as I passed. E. Paid very little attention to my marks.

10. If I had done the very best I could scholastically:
A. I would have been at the top of my class. B. I could have been in the top 10%. C. I would have been far above average. D. I would have been a little above average. E. I would have been average. F. I doubt that I could have made average.

11. The teachers I got the most out of in school usually:
A. Gave me very general instructions or directions and then left me alone to do the assignment. B. Were quite specific in their assignments and followed me up from time to time. C. Went into thorough detail and followed my work very closely.

12. While in school, I considered the best time for efficient study to be:
A. In the afternoon just after coming from school. B. In the early morning before going to school. C. During school, between classes or in free periods. D. In the evenings, right after dinner. E. Late at night after things had settled down. F. On weekends. G. I preferred no particular time.

13. With respect to studying during my last two years of high school:
A. I did not do much studying because of other demands on my time. B. I did not do much studying because it wasn't necessary. D. I studied regularly throughout the school year. E. I planned and did extra studying beyond that specifically required for my school work.

14. By the time I had graduated from high school, I had been (Mark all that apply)
A. A captain of a school athletic team. B. Manager of a school athletic team. C. Editor of the school paper or yearbook. D. President of a school club. E. President of my class or the student council. F. Chairman of an important student committee. G. Leading actor in a school play. H. Soloist in a musical program, vocal or instrumental. I. Something equally noteworthy but not listed here.

15. During my high school years I was a member of (Mark all that apply)
A. An athletic team. B. A social club or fraternity. C. A school group (debating team, political science club, etc.). D. A school musical organization (band, orchestra, chorus, etc.). E. An honor society or the honor roll. F. I never had an opportunity to be a member of these groups.

16. During my school years, when it came to doing the things I wanted to do, such as being a member of an athletic team, school club, honor roll, etc.
A. I succeeded without much effort. B. I succeeded about as easily as most. C. I had to work hard to succeed. D. I tried very hard, and sometimes failed. E. I failed frequently. F. I didn't really try for anything special.

17. During my last two years of high school the number of hours per week I spent on athletics, both in and out of school, was about:
A. None. B. 1 to 4. C. 5 to 9. D. 10 to 14. E. 15 or more.

18. During my last year in high school the number of evenings a week that I would go out socially was:
A. Less than 1. B. 1. C. 2. D. 3. E. 4 or more.

19. At some time or other while I was growing up I had visions of becoming (Mark all that apply)
A. An actor or singer. B. An artist or concert musician. C. An aviator. D. A chemist. E. A corporation executive. F. An engineer--mechanical, electrical, etc. G. A farmer or rancher. H. A fireman or policeman. I. A machinist, electrician or similar craftsman. J. A military man--soldier, sailor or marine. K. A politician. L. A professional athlete. M. A professional man--doctor, lawyer, etc. N. A research scientist. O. A salesman. P. A shop or store owner. Q. A space explorer or astronaut. R. A teacher. S. A truck driver.

20. The occupation which my father followed most of his life may be best described as:
A. Business executive. B. Clerical or office worker. C. Farmer or rancher. D. Professional man (doctor, lawyer, etc.). E. Salesman. F. Store or shop owner. G. Service worker (barber, Chauffer, etc.). H. Skilled craftsman (carpenter, machinist, etc.). I. Unskilled or semi-skilled worker. J. Other.

21. The organizations to which my father belonged while I was growing up were (Mark all that apply)
A. Athletic club. B. Chamber of Commerce. C. Church group. D. Country club. E. Farmers' association or grange. F. Fraternal organization. G. Hunting or fishing club. H. Labor union. I. Management association. J. Parent-teachers' association. K. Professional association. L. Trade association. M. University or college alumni club. N. Other organization. O. None of these.

22. When I was growing up my father worked at a job or jobs which required him to (Mark all that apply)
A. Travel and be away from home more than the fathers of my friends. B. Work different shifts and have different days off. C. Wear a uniform which was distinctive of his job or company. E. Have specialized education or formal training. F. Drive an automotive vehicle a great deal. G. Entertain visitors or clients often. H. Be in disagreeable or dangerous surroundings.

23. While I was growing up my mother was employed outside of our home (Mark all that apply)
A. Never. B. Before I started to school. C. When I was in grammar school. D. When I was in high school.

24. At some time during her life my mother worked for pay for a substantial period of time in (Mark all that apply)
A. Business, running a shop or store. B. Clerical or stenographic work. C. Factory work. D. House work. E. Nursing. F. Sales work in a shop or store. G. Service work such as cook or beautician. H. Sewing. I. Teaching or library work. J. Some other kind of work. K. None of above, she was never employed.

25. The organizations to which my mother belonged while I was growing up were (Mark all that apply)
A. Card club. B. Church group. C. Cultural society. D. Garden club. E. Labor union. F. Parent-teachers' association. G. Political club. H. Professional association. I. Sewing circle. K. Some other organization. L. None of these.

26. During my teens my parents and I got along:
A. Very well; we agreed on almost everything. B. Better than most; we rarely had disagreements. C. About average; as well as other family groups. D. Not very well; we had many disagreements. E. Not at all; we almost never agreed.

27. While I was growing up, my brothers and sisters and I:
A. Got along very well together. B. Quarreled occasionally. C. Rarely agreed on anything. D. Didn't quarrel but we didn't have very much to do with one another. E. I was an only child.

28. When I was a boy, my father helped me in (Mark all that apply)
A. Learning to use tools. B. Learning sports. C. School work. D. Selecting school subjects. E. Selecting a job. F. Learning to drive a car. G. None of these.

29. When I was a boy, my mother helped me in (Mark all that apply)
A. Choosing clothes. B. Choosing girl friends. C. Music. D. School work. E. Selecting school subjects. F. Selecting reading material. G. None of these.

30. During my teens, when my family was together for an evening, we would usually:
A. Talk over subjects of general interest. B. Talk about the personal problems we had during the day. C. Play games together. D. Watch television or listen to the radio. E. Read, work puzzles, write, etc. F. Concern ourselves with our own activities. G. Do something else.

31. As a young man, when I returned home from a date, my parents usually (Mark all that apply)
A. Were very inquisitive. B. Scolded me because I did not come home earlier. C. Were waiting up when I came in. D. Were interested but did not ask many questions. E. Teased or kidded me about the evening. F. Had retired for the night.

32. During the years I was in high school, most of my spending money came from:
A. Allowance from the family. B. My own earnings. C. Partly allowance and partly earnings. D. No place; I did not have much spending money.

33. During my teens my parents permitted me to make the final decisions concerning (Mark all that apply)
A. Attending religious services. B. Courses I took in school. C. Decorating my room. D. Drinking. E. Selecting my clothes. F. Smoking. G. Spending the money I was given or had earned. H. Taking music lessons. I. The hour I should be home. J. Use of my spare time. K. Use of the automobile. L. Whom I dated. M. None of these.

34. When I was in high school, the money which my family had was:
A. Less than most of the families of my classmates. B. About the same as the families of my classmates. C. A little more than the families of my classmates. D. Considerably more than the families of my classmates. E. I don't know or didn't give it much thought.

35. During my last couple of years in high school the number of hours a week I averaged on part-time paid jobs was:
A. None. B. 1 to 5. C. 6 to 10. D. 11 to 15. E. 16 or more.

36. At some time or other I have worked for pay doing (Mark all that apply)
A. Auto or real estate selling, etc. B. Camp counselor, YMCA work, playground supervisor, etc. C. Clerical or office work. D. Farm worker, farmer, or ranch hand. E. Seaman or sailor. F. Semi-skilled labor, factory or plant work. G. Skilled labor (machinist, electrician, etc.). H. Timbering. I. Unskilled labor, ditch digger, road gang, etc.

37. The main reasons why I left (or want to leave) my last regular employer (excluding part-time and summer jobs and release from military service) were (Mark all that apply)
A. Little chance for advancement. B. Unsatisfactory work assignments. C. Poor supervision. D. Dissatisfaction with salary. E. Poor working conditions. F. Some other reason. G. None, I have had no previous regular employer.

38. In looking for a job the <u>three</u> things I consider most important are (Mark three)
A. Opportunity for advancement. B. Credit from management for good performance. C. High salary. D. Good working conditions. E. Opportunity for individual thought and initiative. F. Job security. G. Alert and aggressive management. H. Geographic location. I. Work in line with my primary interest.

39. The speed at which I usually work is:
A. Much faster than most people. B. Somewhat faster than most people. C. Somewhat slower than most people. D. Quite variable, depending on the situation. E. A question mark to me, I am unable to tell how I compare.

40. If I have an hour or so to kill while waiting in a public place I most frequently:
A. Try to strike up a conversation with someone. B. Read newspapers or magazines. C. Read a book. D. Work crossword puzzles or similar word games. E. Watch people and their curious actions. F. Find someplace where I can get a snack or drink. G. Something else.

41. The number of fiction books I have read in the past year is:
A. None. B. 1 or 2. C. 3 or 4. D. 5 to 9. E. 10 or more.

42. In an average week I spend at least three hours (Mark all that apply)
A. Reading newspapers or magazines. B. Watching television. C. Listening to radio or records. D. Hunting, fishing, boating, hiking, etc. F. At parties or other activities with friends. G. Mowing the lawn, doing chores around the house. H. Studying or serious reading for self-improvement. I. Taking extension or correspondence courses. J. Making or repairing something in my shop or other work place. <u>K</u>. At sports events such as ball games, racing, etc. L. Going to movies, plays, concerts, etc.

43. If I have a difficult decision to make, my typical pattern is to:
A. Make it just as soon as the evidence has been weighed. B. Sleep on it and decide in the morning. C. Think it over for two or three days. D. Ponder it carefully for a week or more.

44. The amount of recognition which I receive for my accomplishments is:
A. None at all. B. Occasional recognition but not often. C. About as much as anyone else. D. As much as is deserved. E. Sometimes more than is deserved.

45. The one of the following statements which I think comes closest to describing my own personality is:
A. Difficult to really get to know. B. Have some really close friends and a number of acquaintances. C. Friendly, easy going, and have a lot of friends. D. Fairly jolly; the life of the party. E. I find it difficult to describe myself.

46. In comparison with most of the people I know, I am able to make new friends:
A. Much more easily. B. A little more easily. C. With the same effort. D. With somewhat more difficulty. E. I haven't given it much thought.

47. In comparison with most other people as an entertainer or leader of the conversation in social affairs, I am:
A. At the top. B. Among the few best. C. Above the average. D. About average. E. Below average. F. I haven't given it much thought.

48. My experience with people tells me that:
A. There is a lot of good in all people. B. There is some good in most people. C. People are about as good as they have to be. D. A surprising number of people are mean and dishonest. E. Most people are just no good.

49. The way I act when I become angry is to:
A. Storm around for a while letting off steam. B. Try not to show that I am angry. C. Talk it over with someone. D. Try to keep away from everybody for a while. E. Never let my temper get the best of me.

50. I feel dissatisfied with myself:
A. Frequently. B. Occasionally. C. Rarely. D. Hardly ever.

51. When I am late for an engagement, I usually:
A. Give an explanation only if I am asked for one. B. Make a brief apology. C. Explain in some detail to justify my lateness. D. Do something else. E. Have no problem since I am practically never late for engagements.

52. Insofar as automobile driving is concerned, I:
A. Am not quite as good as most other drivers. B. Am as good as most other drivers. C. Am better than most other drivers. D. Am one of the best drivers.

53. My physical condition is:
A. Fair--can work regularly but don't always feel quite right. B. Good--as good as that of most people. C. Excellent--can tackle any job. D. Perfect--can drive hard on any job night and day.

54. When I get into a competitive situation such as a race or a game or an exam:
A. I do better than usual. B. I perform at my usual level. C. I tend to get upset and do a little poorer than usual. D. I try to ignore the fact that it is competitive. E. I find it impossible to predict in advance how I will do.

55. At some time in my life I have (Mark all that apply)
A. Been an officer in some group not connected with school. B. Borrowed at least $500 other than on a home mortgage or to finance a car. C. Done an oil painting or sculpture, written an article or story, or composed a musical selection. D. Driven a car more than 90 miles an hour. E. Eaten some exotic food like octopus, rattlesnake meat, fried ants, etc. F. Exhibited something in a competition which I had made, developed or raised. G. Gambled with more money than I could really afford to lose. H. Gotten into a fist fight where I was boiling mad. I. Hitch-hiked my way for 100 miles or more. J. Made a speech before more than 100 people.

APPENDIX B

EMPLOYEE PERFORMANCE REPORT

DIRECTIONS

This form consists of 180 statements. The statements are grouped into thirty blocks, and each block contains six statements.

To fill out the form properly, you must consider each of the blocks separately. Read all six statements in the first block; then pick out the TWO statements that BEST describe that person on whom you are reporting. CIRCLE the letter that appears before each of the two statements that you have selected. You must do the same thing for each of the thirty blocks. You must mark TWO, neither more nor less, in each block, otherwise you will be penalizing the employee. You may rightfully feel that none of the statements in a block is an exact description of the man, but it is necessary that you make the best choice that you can. Consider each block as an independent unit. Since the comparisons are different from block to block, it is not necessary to refer to previous marks in order to be consistent. Please return this form, when completed, to:

W. A. Abercrombie
Employee Relations Building

1. A. Can work under pressure. B. Is right on hand when needed. C. Has little interest in self-improvement. D. Is neat in appearance. E. Finds it difficult to accept the ideas of others. F. Keeps work output up to schedule.

2. A. Respects opinions of others. B. Has prepared himself for this particular kind of work. C. Obeys orders willingly. D. Gives only "lip service" to rules. E. Looks to others for decisions. F. Can take criticism without getting angry.

3. A. Resents constructive criticism. B. Gets along well with co-workers and supervisors. C. Spends his work day on company business. D. Is a safe worker. E. Is interested in the job. F. Is unable to produce work rapidly.

4. A. Knows less than average employee about the work. B. Likes to take on responsibilities. C. Needs help in making routine decisions. D. Is well liked by others. E. Is loyal to the company. F. Practices safety.

5. A. Is thorough in completing assignments. B. Is impartial in his dealings with others. C. Is absent from work a great deal. D. Has a thorough knowledge of his job. E. Waits to be told what to do next. F. Goes out of his way to help others.

6. A. Thinks safety rules and regulations are a lot of bunk. B. Takes the attitude he is disliked. C. Is a tireless worker. D. Seems to be relaxed and free from worry. E. Is willing to share in unpleasant work. F. Voluntarily looks for other work when regular work is completed.

7. A. Can handle only one job at a time. B. Is making good progress. C. Does exactly as he is told. D. Does not spread rumors. E. Willingly accepts criticism. F. Puts off doing things.

8. A. Is not open to new ideas. B. Is popular with other employees. C. Is careless in detail work. D. Ability to learn is above average. E. Is at ease in any situation. F. Is punctual.

9. A. Can handle a large amount of work. B. Offers suggestions for improvement of working methods and conditions. C. Requires close supervision. D. Resents suggestions and criticisms. E. Is a good team worker. F. Keeps physically fit.

10. A. Adapts himself to new methods easily. B. Is very popular with fellow employees. C. Is anxious to accept any assignment. D. Is slow to catch on to the mechanics of the work. E. Does not bother to learn the rules. F. Prefers to keep busy at all times.

11. A. Has good experience background. B. Is neat and orderly in his work. C. Is usually cooperative. D. Is too valuable to lose. E. Is very sensitive. F. All his work must be checked in detail by others.

12. A. Has neat and mannerly work habits. B. Can put on steam in an emergency. C. Can not be trusted. D. Causes trouble among fellow workers. E. Picks up new assignments very rapidly. F. Has ability to go higher.

13. A. Does not put off doing things. B. Gets results. C. Is capable of handling a higher position. D. Depends too much on the abilities of others. E. Frequently questions company policy. F. Does not alibi when things go wrong.

14. A. Does things to letter. B. Lets others take the lead. C. Is willing to assist new employees. D. Is boastful. E. Is a person one can bank on. F. Exercises good judgment.

15. A. Follows work schedule closely. B. Does not respect the intelligence of his fellow workers. C. Does good work in emergencies. D. Observes company rules. E. Fails to grasp the whole of the problem. F. Is a credit to his department.

16. A. Is not easily discouraged. B. Irritates other people. C. Is ambitious. D. Gets tired of work easily. E. Is always aware of what he is trying to do. F. Helps others practice safety.

17. A. Is dependable. B. Is resentful when asked to help others. C. Is well balanced emotionally. D. Has not learned as fast as others working with him. E. Does extra work in order to learn. F. Has a good attendance record.

18. A. Always thinks "Safety First." B. Is easy to talk to. C. Will admit being wrong. D. Waits for work to be assigned. E. Resents being given a rush job. F. Knows job thoroughly.

19. A. Is lazy. B. Is slow but sure. C. Is tactful. D. Does more than is expected. E. Acts natural. F. Locates and corrects his own mistakes.

20. A. Is content with just average work. B. Could do the next higher job now. C. Needs little supervision. D. IS disloyal. E. Is careful of the feelings of others. F. Does not insist on having his own way.

21. A. Rarely finishes what he starts. B. Is not easily disturbed. C. Reports unsafe condition of equipment. D. Is hard to get along with. E. Will be an outstanding employee. F. Performs assignments efficiently and speedily.

22. A. Requires too much instruction. B. Is well liked by his fellow workers. C. Does not make excuses to keep from working on an overtime job. D. Is determined to make good. E. Keeps his head. F. Is careless with equipment.

23. A. Is a slow worker. B. Carries all jobs to satisfactory completion. C. Is quiet. D. Avoids arguments. E. Does more than his part to get the job done. F. Attendance record is below average.

24. A. Fellow workers respect his knowledge of the job. B. Has limited ability to go higher. C. Nurses any grievance. D. Performs duties with a minimum of supervision. E. Goes out of his way to help others. F. Follows instructions very accurately.

25. A. Is honest. B. Sticks to job even when not closely supervised. C. Is inclined to make trouble. D. Plans his work. E. Gives excuses. F. Is capable of taking on more responsibility.

26. A. Is not a "clock watcher." B. Knows appropriate safety practices. C. Talks too much. D. Does not plan his work satisfactorily. E. Views the bright side of things. F. Accepts responsibility.

27. A. Is cautious. B. Is willing to work extra hours if necessary. C. Has few leadership characteristics. D. Readily assumes his share of blame when things go wrong. E. Is well suited for this type of work. F. Jumps to conclusions.

28. A. Must be told when, what and how on every job. B. Carefully observes all safety rules. C. Is conceited. D. Makes every move count on the job. E. Is willing to work under adverse conditions. F. Is a favorite with co-workers.

29. A. Works to full limit of his ability. B. Has an indifferent attitude toward his work. C. Is almost never late for work. D. Is generally grouchy. E. Can work well with anybody. F. Sees what will be needed later and gets ready.

30. A. Is one of the team. B. Sets the pace for others. C. Is careless about his appearance. D. Is usually pleasant and cheerful. E. Needs more supervision than the average employee. F. Is quick to grasp new work and new systems or methods.

APPENDIX C

THE MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF THE CRITERIA

MEANS AND STANDARD DEVIATIONS FOR BIB
PREDICTION OF TEST BATTERY PERFORMANCE

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
			High	Low	High	Low		
No Moderator	Sample 1	N	30	30	30	30		
		M	235.24	153.66	24.13	11.50		
		SD	11.51	26.49	5.66	6.25		
	Sample 2		30					
		N	30	30	30	30	1537	1537
		M	239.99	148.08	21.93	7.00	200.66	8.80
		SD	12.65	27.47	5.33	8.21	32.31	5.40
Upper SEL	Sample 1							
		N	30	30	30	30		
		M	243.27	150.83	26.23	7.77		
		SD	11.87	26.12	7.31	9.33		
	Sample 2							
		N	30	30	30	30	282	282
		M	239.25	155.41	30.57	9.47	201.82	11.84
		SD	10.28	30.48	9.47	9.08	29.07	6.70
Lower SEL	Sample 1							
		N	30	30	30	30		
		M	237.75	158.46	22.53	12.30		
		SD	14.13	22.50	7.13	5.94		
	Sample 2							
		N	30	30	30	30	870	870
		M	237.14	161.28	12.53	4.30	200.64	6.01
		SD	11.02	18.90	4.14	3.96	31.71	3.89

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF TEST BATTERY PERFORMANCE (Continued)

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
Upper/Lower SEL: High	Sample 1		Upper SEL	Lower SEL	Upper SEL	Lower SEL		
		N	30	30	30	30		
		M	242.53	237.74	2.90	-1.77		
		SD	11.77	14.13	2.62	2.01		
	Sample 2							
		N	30	30	30	30		
		M	240.76	237.14	2.13	-2.00		
		SD	12.92	11.02	2.79	2.70		
Upper/Lower SEL: Low	Sample 1		Upper SEL	Lower SEL	Upper SEL	Lower SEL		
		N	30	30	30	30		
		M	153.66	158.46	-.77	-1.43		
		SD	26.49	22.50	1.72	2.27		
	Sample 2							
		N	30	30	30	30		
		M	148.08	161.28	-.70	-2.03		
		SD	27.47	18.90	2.48	2.36		
Negro Moderator	Sample 1		High Score	Low Score	High Score	Low Score		
		N	30	30	30	30		
		M	195.26	112.70	25.33	8.90		
		SD	13.09	16.35	7.55	5.60		
	Sample 2							
		N	30	30	30	30	162	162
		M	198.55	119.93	24.03	6.33	157.65	8.50
		SD	18.38	14.70	9.27	8.32	19.81	5.79

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF TEST BATTERY PERFORMANCE
(Continued)

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
White Moderator	Sample 1		High Score	Low Score	High Score	Low Score		
		N	30	30	30	30		
		M	238.58	173.85	13.20	2.90		
		SD	8.49	16.19	5.44	3.92		
	Sample 2							
		N	30	30	30	30	1248	1248
		M	240.17	175.99	14.50	4.80	208.23	4.54
		SD	12.10	14.42	5.21	4.43	26.40	3.42
White/Negro: High Score	Sample 1		White	Negro	White	Negro		
		N	30	30	30	30		
		M	238.58	195.29	7.97	-2.80		
		SD	8.49	13.09	4.91	5.37		
	Sample 2							
		N	30	30	30	30		
		M	240.17	198.55	13.57	.77		
		SD	12.10	18.38	5.92	6.82		
White/Negro: Low Score	Sample 1		White	Negro	White	Negro		
		N	30	30	30	30		
		M	173.85	112.70	19.40	2.07		
		SD	16.19	16.35	6.60	5.53		
	Sample 2							
		N	30	30	30	30		
		M	175.99	119.93	23.93	6.47		
		SD	14.47	14.70	5.33	7.36		

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF TEST BATTERY PERFORMANCE (Continued)

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
Upper SEL Negro	Sample 1		High Score	Low Score	High Score	Low Score		
		N	10	10	10	10		
		M	187.34	107.33	12.90	-1.50		
		SD	19.13	23.95	4.75	4.84		
	Sample 2							
		N	10	10	10	10	27	27
		M	186.23	109.12	12.30	.20	151.13	4.42
		SD	20.22	21.63	3.47	3.26	22.62	2.48
Upper SEL White	Sample 1		High Score	Low Score	High Score	Low Score		
		N	30	30	30	30		
		M	242.74	171.20	20.53	6.53		
		SD	11.53	19.32	7.42	6.93		
	Sample 2							
		N	30	30	30	30	225	225
		M	243.84	177.24	19.63	4.40	208.54	5.71
		SD	10.72	12.97	7.42	7.15	22.30	4.52
Lower SEL Negro	Sample 1		High Score	Low Score	High Score	Low Score		
		N	30	30	30	30		
		M	199.17	122.52	28.30	5.97		
		SD	15.10	12.48	7.31	6.52		
	Sample 2							
		N	30	30	30	30	89	89
		M	201.45	123.92	26.20	3.77	159.49	14.30
		SD	17.20	11.35	3.77	6.85	19.03	7.64

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF TEST BATTERY PERFORMANCE (Continued)

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
Lower SEL White	Sample 1		High Score	Low Score	High Score	Low Score		
		N	30	30	30	30		
		M	240.69	169.21	18.57	5.37		
		SD	10.55	18.48	6.90	6.57		
	Sample 2							
		N	30	30	30	30	701	701
		M	240.18	176.75	15.30	1.83	209.01	5.83
		SD	10.51	11.21	5.13	4.11	24.52	4.37
Upper SEL Wh/Neg: High	Sample 1		White	Negro	White	Negro		
		N	10	10	10	10		
		M	250.62	195.35	9.70	2.70		
		SD	12.74	20.02	4.62	6.04		
	Sample 2							
		N	10	10	10	10		
		M	238.78	192.08	5.30	-.50		
		SD	7.39	17.27	3.34	5.28		
Upper SEL White/Neg: Low	Sample 1		White	Negro	White	Negro		
		N	10	10	10	10		
		M	163.14	101.86	7.10	-4.60		
		SD	23.55	21.96	4.65	6.08		
	Sample 2							
		N	10	10	10	10		
		M	173.93	104.70	11.20	.70		
		SD	17.47	18.37	2.25	7.36		

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF TEST BATTERY PERFORMANCE
(Continued)

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
Lower White/Negro:High	Sample 1		White	Negro	White	Negro		
		N	30	30	30	30		
		M	240.69	199.17	14.20	.57		
		SD	10.55	15.10	5.97	5.70		
	Sample 2							
		N	30	30	30	30		
		M	240.18	201.45	9.03	-3.90		
		SD	10.51	17.20	6.12	5.37		
Lower White/Negro: Low	Sample 1		White	Negro	White	Negro		
		N	30	30	30	30		
		M	169.21	122.52	17.73	1.63		
		SD	18.48	12.48	5.75	4.45		
	Sample 2							
		N	30	30	30	30		
		M	176.75	123.92	17.03	1.60		
		SD	11.21	11.35	6.21	5.10		
Upper/Lower Negro: High	Sample 1		Upper Negro	Lower Negro	Upper Negro	Lower Negro		
		N	10	10	10	10		
		M	195.35	206.33	-.40	-4.80		
		SD	20.02	18.94	6.48	4.05		
	Sample 2							
		N	10	10	10	10		
		M	192.08	202.63	3.10	-1.60		
		SD	17.27	13.49	3.87	3.13		

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF TEST BATTERY PERFORMANCE (Continued)

			Item Analysis				Validity	
			Test	Test	BIB	BIB	Test	BIB
Upper/Lower Negro: Low	Sample 1		Upper Negro	Lower Negro	Upper Negro	Lower Negro		
		N	10	10	10	10		
		M	102.75	118.54	2.70	-.20		
		SD	22.91	11.98	3.13	2.70		
	Sample 2							
		N	10	10	10	10		
		M	106.32	122.86	1.30	-3.80		
		SD	19.05	11.71	3.40	1.55		
Upper/Lower White: High	Sample 1		Upper White	Lower White	Upper White	Lower White		
		N	30	30	30	30		
		M	242.74	240.69	4.13	.23		
		SD	11.53	10.55	2.64	2.10		
	Sample 2							
		N	30	30	30	30		
		M	243.80	240.18	4.00	-.80		
		SD	10.72	10.51	3.37	2.38		
Upper/Lower White: Low	Sample 1		Upper White	Lower White	Upper White	Lower White		
		N	30	30	30	30		
		M	171.20	176.75	-.90	-3.60		
		SD	19.32	11.21	3.22	2.85		
	Sample 2							
		N	30	30	30	30		
		M	177.24	169.21	-2.07	-4.10		
		SD	12.97	18.48	2.05	2.59		

MEANS AND STANDARD DEVIATIONS FOR BIB
PREDICTION OF INTERVIEW RATING

			Item Analysis				Validity	
			Interview	Interview	BIB	BIB	Interview	BIB
No Moderator	Sample 1		High Rating	Low Rating	High	Low		
		N	83	83	83	83		
		M	3.07	1.47	3.99	3.52		
		SD	.26	.50	3.31	2.84		
	Sample 2							
		N	83	83	83	83		
		M	3.06	1.48	1.25	1.10		
		SD	.24	.50	2.67	2.68		
Upper SEL	Sample 1		High Rating	Low Rating	High	Low		
		N	19	19	19	19		
		M	3.16	1.48	-.48	-2.11		
		SD	.38	.51	2.59	2.62		
	Sample 2							
		N	19	19	19	19		
		M	3.05	1.37	-.21	-1.37		
		SD	.23	.50	2.64	3.88		
Lower SEL	Sample 1		High Rating	Low Rating	High	Low		
		N	49	49	49	49		
		M	3.04	1.43	3.45	3.04		
		SD	.20	.50	2.61	2.37		
	Sample 2							
		N	49	49	49	49		
		M	3.08	1.51	1.80	1.51		
		SD	.28	.50	2.43	2.43		

MEANS AND STANDARD DEVIATIONS FOR BIB
PREDICTION OF PHYSICAL RATINGS

			Item Analysis				Validity	
			High Physical	Low Physical	High BIB	Low BIB		
No Moderator	Sample 1	N	52	52	52	52		
		M	1.96	3.37	2.54	2.67		
		SD	.19	.49	3.34	2.80		
	Sample 2	N	52	52	52	52		
		M	1.96	3.29	1.15	1.62		
		SD	.19	.46	1.99	1.84		
Upper SEL	Sample 1	N	10	10	10	10		
		M	2.00	3.50	4.10	5.70		
		SD	.00	.53	3.35	4.37		
	Sample 2	N	10	10	10	10		
		M	1.90	3.40	.60	.30		
		SD	.32	.52	2.27	1.95		
Lower SEL	Sample 1	N	32	32	32	32		
		M	1.97	3.47	-1.50	-1.13		
		SD	.18	.41	2.49	2.09		
	Sample 2	N	32	32	32	32		
		M	1.94	3.16	-1.66	-1.19		
		SD	.25	.37	3.39	2.55		

MEANS AND STANDARD DEVIATIONS FOR BIB
PREDICTION OF CLASSROOM PERFORMANCE

			Item Analysis				Validity	
			Classroom	Classroom	BIB	BIB	Classroom	BIB
No Moderator	Sample 1		High	Low	High	Low		
		N	20	20	20	20		
		M	93.50	76.70	-1.55	-1.40		
		SD	2.12	4.09	2.72	2.62		
	Sample 2							
		N	20	20	20	20	64	64
		M	92.40	78.50	2.10	2.25	86.33	-.06
		SD	2.28	4.22	3.02	2.61	5.50	.24
Upper SEL	Sample 1							
		N	8	8	8	8		
		M	92.63	82.25	-.63	-1.50		
		SD	2.72	4.03	2.33	1.77		
	Sample 2							
		N	8	8	8	8		
		M	92.50	81.25	1.50	-.25		
		SD	2.73	4.62	3.07	1.83		
Lower SEL	Sample 1							
		N	15	15	15	15		
		M	93.33	77.53	-.40	-.47		
		SD	2.13	5.41	1.72	3.18		
	Sample 2							
		N	15	15	15	15		
		M	93.07	77.80	-.53	1.20		
		SD	2.46	4.18	2.64	1.47		

MEANS AND STANDARD DEVIATIONS FOR BIB PREDICTION OF ON-JOB PERFORMANCE

			Item Analysis				Validity	
			Performance	Performance	BIB	BIB	Performance	BIB
No Moderator	Sample 1		High	Low	High	Low		
		N	20	20	20	20		
		M	103.75	55.60	-.85	-1.95		
		SD	5.12	23.23	2.64	3.09		
	Sample 2							
		N	20	20	20	20	69	69
		M	103.70	58.15	.40	.05	88.22	-.74
		SD	4.76	25.42	1.47	1.47	15.99	.87
Upper SEL	Sample 1							
		N	8	8	8	8		
		M	102.50	70.25	.25	1.00		
		SD	4.78	28.11	2.12	2.20		
	Sample 2							
		N	8	8	8	8		
		M	102.25	74.63	1.63	2.25		
		SD	4.89	28.07	2.56	1.83		
Lower SEL	Sample 1							
		N	15	15	15	15		
		M	102.93	55.27	2.00	1.80		
		SD	4.20	20.75	3.09	2.98		
	Sample 2							
		N	15	15	15	15	36	36
		M	103.20	63.20	-.33	-.20	89.53	-.44
		SD	5.34	21.13	1.99	3.32	9.27	.56

VITA

Richard Lockwood Cherry was born in Norfolk, Virginia, on December 23, 1938. He attended public schools in Norfolk and was graduated from Granby High School in 1957. He received the Bachelor of Arts degree in Psychology from Old Dominion College in 1961 and the Master of Arts degree in Psychology from The College of William and Mary in 1964.

He is a member of the Southeastern Psychological Association. At the present time he is employed as an Industrial Psychologist by the Ralston Purina Company at St. Louis, Missouri.

EXAMINATION AND THESIS REPORT

Candidate: Richard Lockwood Cherry

Major Field: Psychology

Title of Thesis: Socioeconomic Level and Race as Biographical Data Moderators

Approved:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Date of Examination:

16 October 1968